



## Bullying in the metropolitan area of Guadalajara, Mexico: prevalence and associated factors

Acoso escolar en la zona metropolitana de Guadalajara, México: prevalencia y factores asociados

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**ABSTRACT** This paper seeks to determine the prevalence of victims of school bullying among youth enrolled in public secondary schools in the metropolitan area of Guadalajara, Mexico and to identify the factors associated with being a victim of bullying in the period 2009-2011. An analytic cross-sectional study was carried out. A multistage probability sampling was designed for the public secondary schools, in which 1,706 students between 11 and 16 years old were studied. A questionnaire with four sections was applied in order to identify victims of bullying. A logistic regression model was then used to measure the association between the factors analyzed and being a victim of bullying. The prevalence of school bullying was 17.6% (95% CI 15.8; 19.5). Personal factors, such as the feeling of not being accepted by peers or not spending much time with friends, were the factors with the strongest statistically significant association with being a victim of bullying.

**KEY WORDS** Violence; Bullying; Adolescent; Mental Health; Mexico.

**RESUMEN** Este estudio tiene como objetivos determinar la prevalencia de víctimas de acoso escolar en alumnos de escuelas secundarias públicas de la zona metropolitana de Guadalajara, México, e identificar factores asociados al hecho de ser víctima en el período 2009-2011. Se realizó un estudio de tipo transversal analítico. Se diseñó una muestra probabilística polietápica de escuelas secundarias públicas y se estudiaron 1.706 alumnos entre 11 y 16 años. Se aplicó un instrumento con cuatro apartados que permitió identificar a las víctimas de acoso y se utilizó un modelo de regresión logística para medir la asociación entre los factores analizados y el ser víctima de acoso. La prevalencia de acoso escolar fue del 17,6% (IC95% 15,8; 19,5). Factores de carácter personal, como sentir que no es aceptado por el grupo o no pasar mucho tiempo con amigos, fueron los que tuvieron una asociación más fuerte y estadísticamente significativa con el hecho de ser víctima de acoso en la escuela.

**PALABRAS CLAVES** Violencia; Acoso Escolar; Adolescente; Salud Mental; México.

## INTRODUCTION

In 1996, the World Health Organization declared violence a matter of public health (1). Ten years later, the Pan American Health Organization reported the findings of a scientific investigation that formed part of a set of strategies aimed at the prevention of school violence, particularly among classmates (2). Bullying is defined as intentional aggressive behavior among peers. There is an abuse of power towards others – on the part of children or adolescents, boys or girls – represented by repeated physical or emotional harm or destructive behavior (3,4).

According to numerous authors, the prevalence of aggressive behavior among classmates in Latin American countries varies between 5% and 60% (2,5-7). However, statistics on the prevalence of abuse are not the only criteria that should be considered when attempting to control bullying; every time a child or adolescent is physically or emotionally harmed due to an act of aggression, there is enough reason to take interest in the situation and outline diverse intervention strategies.

In this study, “victims of school bullying” are defined as the students of a school who have either individually or collectively been subjected to any type of harm (physical, emotional, or damage to personal property), due to the action or inaction of one or more of their classmates, on or off school grounds (3). The harm caused can have multiple observable consequences, and may vary according to their duration (immediate or long term consequences), intensity (minor or serious consequences), or extent (temporary or permanent consequences) (8).

Connections have been consistently made between people subjected to different types of aggression and the presence of psychosomatic morbidity, injuries of varying intensity, and high-risk behaviors (9), as well as higher levels of depression and anguish, greater likelihood of suicidal thoughts or behaviors, and psychiatric issues (10).

The analysis of the magnitude and characteristics of criminal acts directed at victims as well as the factors related to victimization are central aspects of victimology. Some of these concepts are applicable to children and adolescents subjected to bullying, even when the abusive acts cannot be criminalized as a legal offence.

Victimization has two main characteristics: the first is related to the active role of the victim; the second, to the victim’s eligibility. Adolescents may display certain features such as vulnerability, unsociability, and naivety (among others), developed over the course of their life, which make them take on a role – whether or not they wish to – that fosters, aids in, and contributes to their victimization. These features grant them an active role. It is a necessary condition that individuals in this active role meet – *de facto* – an aggressor who finds them attractive as a victim, such that their disadvantages allow the other person to harm or exert power over them. Therefore, victimization is not a random phenomenon, but rather aggressors choose their victims (hence, in part, the intentionality of the act). In a sense, there is a mutual victim-victimizer motivation (11); victims usually possess certain characteristics that “have some congruence with the needs, motives, or reactivities of potential offenders” (12 p.3). Even in school environments characterized by negative interactions, these should not be conceived of as circumstantial or indiscriminate acts. Blame must not be placed on the victims, and most importantly secondary victimization should be avoided.

In this study, three components are recognized among victimogenous factors, that is, the factors that put individuals at risk of becoming victims: the family’s socioeconomic context, factors related to micro-social interaction, and factors inherent to the adolescent.

Therefore, in this study we seek to determine the prevalence of school bullying victims among youth enrolled in public secondary schools in the metropolitan area of Guadalajara, Mexico, and to identify victimogenous factors associated with becoming a victim in the 2009-2011 period.

## DATA AND METHODOLOGY

An analytic, cross-sectional study was conducted. Data were gathered between 2009 and 2011 from public secondary schools in the metropolitan area of Guadalajara – Mexico’s second most populated urban area with a population of approximately 4.4 million in 2010, a “marginalization index” considered to be very low by

national standards, and with a relatively homogeneous ethnic makeup (13).

Multistage probability sampling was used: first, 18 of the total number of state-run secondary schools in the metropolitan area were randomly chosen; next, a school shift (morning or afternoon) was randomly selected, and one group from each grade was chosen. All students in each selected group were studied. The size of the sample was determined using EPIDAT 3.1. According to the statistical criteria adopted – 95% confidence interval, 2.5% precision, 25% prevalence, and a design effect of 1.5 (to correct for the size of the sample due to its multistage design) – and taking into account that the number of students enrolled in the 2008-2009 school year was 106,775, the sample included 1,712 students of both sexes. Given that incomplete questionnaires were not considered and there were cases of students who refused participation, 1,706 students were included in the final sample (99% of the initial size): 875 males and 831 females.

In order to collect data, a survey instrument with four sections was developed, according to the variables to be analyzed: socio-demographic aspects, health aspects, victimization scale, and personality test (*Eysenck Personality Questionnaire-Junior*). Prior to this, a pilot test was run to adjust the vocabulary used in the questionnaire to the student's understanding. Given the age and cognitive capacity of the students, the questionnaire was self-administered, and answered in their habitual classroom during regular class time or at a time designated by school authorities. An overview of the questionnaire and statements about the confidentiality, anonymity and voluntary nature of participation were made by members of the research team specifically trained for this purpose (sociologists and social service agents with backgrounds in psychology, nutrition, and medicine).

The dependent variable was having been a victim of school bullying. A victimization scale was designed for the purpose of establishing the prevalence of adolescents who had been victims of school bullying by measuring the frequency of abuse perceived by students. The scale was designed based on the operational definition of the concept of victim from *ad hoc* measurement instruments which had been tested in previous

studies (14-16), and 15 semi-structured interviews with secondary school students in the metropolitan area of Guadalajara, the results of which helped to choose the most significant questions for adolescents.

The reliability of the questionnaire was determined using Cronbach's alpha coefficient. The value obtained after applying this test was 0.886, indicating acceptable internal consistency of the instrument.

The scale was separated into 27 items: eleven concerning physical violence (five items for minor, four for moderate, and two for serious); twelve related to emotional or psychological violence (three items for verbal abuse, two for social violence, four for threats, and three for blackmail); and four related to destructive actions directed at the student's belongings. For each item, the frequency with which the student had suffered any aggression in the six months prior was measured. The following categories were applied: never=1; occasionally=2; often=3; and constantly=4. These subscales were similar to those used by Trianes (17).

In order to determine victim status, the following procedure was adopted:

- First, the score that a student would have hypothetically obtained if they answered all the questions for each of the different types of violence with a single category was determined. For instance, the possible scores for minor physical violence would be: 5 (never), 10 (occasionally), 15 (often), and 20 (constantly). Given the criteria of repeated aggression inherent to the concept of victim, the threshold was set at the lower limit of the "often" category to qualify the student as a victim (with the exception of serious physical violence, for which it was considered that a single event would constitute victimization of the individual). Injuries, fractures, and burns did not require repetition, given that these are actions that can even be seen as criminal offences.
- Second, according to the scores obtained the presence of violence in each of its forms was determined, which allowed for the identification of victims. The proportion of students possessing this status was established in order to estimate its prevalence and Fleiss' quadratic

method was used to calculate the confidence interval (95%) (18).

The use of the victimization scale allowed not only for the identification of victims but also for determining the number of adolescents who did not fall under this category. A questionnaire for identifying aggressors was also administered, which helped to distinguish between those who could be classified as aggressors because of their behaviors and those who could not. The latter group – called *non-victims/non-aggressors* – was compared with the victims group in order to identify the factors associated with being a victim.

The explanatory or independent variables were dichotomized in order to simplify the analysis and were ordered according to their condition as possible victimogenous factors:

- a. *Socioeconomic context of the family*: overcrowding index (more than 3 individuals per bedroom); home ownership (owned by someone other than the parents or presenting irregular tenancy); possession of communication devices and information technology (not having a cell phone, a personal computer, or Internet connection); mother's occupation (retail or street vending); having less than 6 books in the house; and parents' education level (6 years of schooling or less).
- b. *Factors related to micro-social interaction*: particularly regarding family and school environments. Regarding the family context, variables that expressed the structure and functionality of the family were included in the analysis: family composition; parents' ages (which indirectly reveals the family's phase of development, for instance, if the parents had the child in question before age 18 or past age 35); absence of a parent; adolescent assigned adult responsibilities (such as requiring them to work to support themselves); and the presence of domestic violence (such as witnessing violence between parents, by parents towards a sibling, or being themselves a victim). Regarding school, the aspects taken into account were: the school shift attended by the student (afternoon); year in school (second year); most recent grade point average obtained (less than 7 on a scale of 10); the number of times the student changed

schools (any); and the level of security at the school (the student does not feel safe).

- c. *Personal factors, inherent to the adolescent*: this category included objective features related to physical appearance (body mass index above 32), physical disability, having smoked at least once, number of hours that the adolescent spends with friends (less than two hours), and gender (female); subjective features were also taken into account related to the adolescent's perception of his/her integration into the school environment (the adolescent "does not feel comfortable at school," "feels lonely," "does not feel accepted," "does not create bonds with friends"), and the acceptance of their body image (the adolescent wishes to modify his/her appearance).

The adjusted prevalence ratios (as well as their 95% confidence intervals) were calculated using a logistic regression model in order to determine the association between the explanatory variables and the dependent variable. Initially, bivariate analysis served to identify the variables that were the most strongly associated with being a victim. Then, multivariate regression analysis (forward stepwise regression) helped to identify the variables that had stonger association with the dependent variable, for each component and overall.

The model was validated using the Hosmer-Lemeshow test for goodness of fit. The statistical processing was performed with Epi Info 7 and the Statistical Package for the Social Sciences, version 19 (SPSS Statistics 19) for Windows.

Regarding ethical aspects, the study complied with the regulations of the Mexico's General Health Act for Health Research and the Declaration of Helsinki. The physical and mental health of the participants were not affected and the study was approved both by school authorities (who are obligated to guarantee the physical and mental welfare of the students on school premises) and by the informed consent of the adolescents, who had the option to respond or to leave at any moment if they wished to do so. The project was approved by the Ethics Committee of the University Health Sciences Center at the Universidad de Guadalajara.

Table 1. Number and percentage of students classified according to their status in terms of school bullying, by factor studied. Public secondary schools of the metropolitan area of Guadalajara, Mexico, 2009-2011.

Factors	Victim (n = 300)		Non-victim/ Non-agressor (n = 1.135)		p-value
	Number	%	Number	%	
<b>Economic context of the family</b>					
Mother with six years or less of schooling	216	72.0	703	61.9	0.0016
Father with six years or less of schooling	223	74.3	697	61.4	0.0000
More than three individuals per bedroom	32	10.7	71	6.3	0.0122
House is owned by someone else or presents irregular tenancy	39	13.0	83	7.3	0.0025
No access to technological communication or information devices	214	71.3	682	60.1	0.0004
Mother's occupation is retail/street vending	55	18.3	153	13.5	0.0422
Less than six books in the house	82	27.3	262	23.1	0.1450
<b>Micro-social interaction: family and school</b>					
Absent mother	9	3.0	39	3.4	0.8469
Absent father	76	25.3	248	21.9	0.2280
Presence of stepfather	10	3.3	38	3.3	0.8666
Mother was less than 18 or over 35 years of age when the student was born	46	15.3	108	9.5	0.0053
Extended family	88	29.3	267	23.5	0.0457
Adolescent is abused by siblings	95	31.7	225	19.8	0.0000
Adolescent is abused by mother	49	16.3	113	10.0	0.0027
Adolescent is abused by father	33	11.0	102	9.0	0.3416
Father abuses mother	29	9.7	72	6.3	0.0609
Father abuses siblings	50	16.7	108	9.5	0.0006
Adolescent works	50	16.7	150	13.2	0.1496
Student enrolled in afternoon school shift	141	47.0	490	43.2	0.2616
Student in second year	112	37.0	374	33.0	0.1746
Student has changed schools	12	4.0	28	2.5	0.2159
Student has repeated a year of school	119	39.7	315	29.8	0.0001
Grade point average less than 7	36	12.0	100	8.8	0.1172
Student does not feel safe at school	121	40.3	356	31.4	0.0042
<b>Personal characteristics of the adolescent</b>					
Body mass index over 32	15	5.0	39	3.4	0.2734
Presence of physical disabilities	118	39.3	347	30.6	0.0049
Has smoked at least once	25	8.3	54	4.8	0.0231
Female	168	59.0	572	50.4	0.0965
Neurotic personality traits	167	55.7	415	36.6	0.0000
Wishes to change his/her body	152	50.7	429	37.8	0.0001
Does not feel accepted by classmates	124	41.3	165	14.5	0.0000
Spends less than two hours a day with friends	53	17.7	98	8.6	0.0000
Does not feel a bond with friends	111	37.0	199	17.5	0.0000
Does not feel comfortable at school	67	22.3	116	10.2	0.0000
Does not feel that the school encourages gaining respect among classmates	70	23.3	217	19.1	0.1231

Source: Own elaboration based on primary data.

<sup>a</sup> $\chi^2$  test. Significance level  $p < 0.05$ .

Table 2. Association between factors related to the social and economic context of the adolescent's family and being a victim of school bullying. Results of logistic regression, multivariate analysis. Public secondary schools of the metropolitan area of Guadalajara, Mexico, 2009-2011.

Variables	RC	SS	PR	95% CI
Father with six years or less of schooling	0.426	0.007	1.53	1.13; 2.08
House is owned by someone else or presents irregular tenancy	0.551	0.008	1.73	1.15; 2.61
No access to technological communication or information devices	0.335	0.027	1.40	1.04; 1.88
Mother's occupation is retail/street vending	0.367	0.036	1.44	1.03; 2.03

Source: Own elaboration based on primary data.

Note: Constant: -3.634. Hosmer-Lemeshow Test ( $\chi^2$ : 4.437; degrees of freedom: 5; statistical significance: 0.488).

RC = Regression coefficient; SS = statistical significance; PR = prevalence ratio; 95% CI = 95% Confidence interval

## RESULTS

The age of the adolescents that participated in the study ranged from 11 to 16 years (average age 13.42 years, standard deviation 1.05), distributed evenly among the three years of secondary education: 34.4% first year students, 34% second year students, and 31.6% third year students. More than half of the students (912, 53.5%) attended classes in the morning shift.

Table 3. Association between factors related to adolescent's micro-social interaction in the family and at school and being a victim of school bullying. Results of logistic regression, multivariate analysis. Public secondary schools of the metropolitan area of Guadalajara, Mexico, 2009-2011.

Variables	RC	SS	PR	95% CI
Adolescent is abused by siblings	0.515	0.001	1.67	1.24; 2.27
Extended family	0.326	0.027	1.39	1.04; 1.85
Mother was less than 18 or over 35 years of age when the student was born	0.561	0.004	1.75	1.20; 2.56
Father abuses siblings	0.480	0.015	1.62	1.10; 2.39
Student has repeated a year of school	0.530	0.000	1.70	1.30; 2.22

Source: Own elaboration based on primary data.

Note: Constant: -4.735. Hosmer-Lemeshow Test ( $\chi^2$ : 1.633; degrees of freedom: 5; statistical significance: 0.897).

RC = regression coefficient; SS = statistical significance; PR = prevalence ratio; 95% CI = 95% confidence interval

A total of 300 victims of school bullying were identified, representing 17.6% of the sample (95% CI [15.8; 19.5]). Greater prevalence was found among females (20.2%; 95% CI [17.6; 23.1]) than among males (15.1%; 95% CI [12.8; 17.7]). Table 1 shows that the percentage of victims from families with unfavorable socio-economic contexts was greater than that of non-victims/non-aggressors. The difference between the percentages was statistically significant for nearly every factor. It should also be noted that nearly three quarters of victims' parents had six years of schooling or less.

Regarding family interaction, while there was almost no difference between the victims and the group of non-victims/non-aggressors with respect to the absent parent item, there was a significant increase in the percentage of victims that were abused at home by their siblings or mother or that had witnessed abuse among their parents and siblings. In addition, it is notable that among the victim group, a more significant proportion of adolescents had been born when their mothers were under age 18 or over age 35 than in the case of the non-victim/non-aggressor group.

With respect to school interactions, the high percentage of victims that did not feel safe or confident at school and the even higher percentage of students that had repeated a year were noteworthy in comparison to non-victims/non-aggressors.

Finally, there were clear differences between victims and non-victims/non-aggressors in their perception of aspects such as: not feeling accepted, not feeling comfortable at school, spending little time with friends, or wishing that they could change their physical appearance. In all cases, the percentage of victims with these characteristics was significantly higher, as well as in the case of students with some type of physical disability or neurotic personality traits.

Tables 2, 3, and 4 present the victimogenous factors that showed the greatest associations with being a victim after the multivariate analysis was performed, by each group or characteristic studied. With regards to the social and economic context of the student's family (Table 2), four factors were included in the equation: parents with six years of schooling or less; living in a home owned by someone other than the parents or presenting tenancy irregularities; not having access

Table 4. Association between factors related to the personal characteristics of the adolescent and being a victim of school bullying. Results of logistic regression, multivariate analysis. Public secondary schools of the metropolitan area of Guadalajara, Mexico, 2009-2011.

Variables	RC	SS	PR	95% CI
Neurotic personality traits	0.440	0.002	1.55	1.17; 2.05
Presence of physical disabilities	0.310	0.032	1.36	1.03; 1.81
Does not feel a bond with friends	0.657	0.000	1.93	1.41; 2.64
Does not feel comfortable at school	0.511	0.008	1.67	1.14; 2.43
Does not feel accepted by classmates	1.270	0.000	3.56	2.65; 4.78
Spends less than two hours a day with friends	0.551	0.007	1.74	1.17; 2.59

Source: Own elaboration based on primary data.

Note: Constant: -6.322. Hosmer-Lemeshow Test ( $\chi^2$ : 3.046; degrees of freedom: 7; statistical significance: 0.881).

RC = regression coefficient; SS = statistical significance; PR = prevalence ratio; 95% CI = 95% confidence interval.

to communication and information technologies; and the mother working as a street vendor. The first two factors mentioned were those that had the highest prevalence rates.

Regarding factors related to micro-social interactions of the adolescent with family and at school (Table 3), the following five were included in the model: living in an extended family; having a parent that abuses siblings; being abused by siblings; having been born when the mother was under age 18 or over age 35; and having repeated at least one school year. These last three factors showed greater prevalence ratios.

When analyzing the adolescent's personal characteristics, six factors were found to be significantly associated with being a victim: a predominance of neurotic personality traits; the presence of physical disabilities; not feeling comfortable at school; spending less than two hours a day with friends; not sharing a bond with friends; and not feeling accepted by classmates. Particularly, this last factor tripled the probability of being a victim of school bullying.

Each of the aforementioned models fit with the data of the sample, especially those concerning micro-social interactions of the adolescent with family and at school and the adolescent's personal characteristics, with *p*-values over 0.8.

Table 5. Association between victimogenous factors in each model (by subgroup of analyzed factors) and being a victim of school bullying. Results of logistic regression, multivariate analysis. Public secondary schools of the metropolitan area of Guadalajara, Mexico, 2009-2011.

Variables	RC	SS	PR	IC95%
Father with six years or less of schooling	0.421	0.008	1.52	1.12; 2.08
House is owned by someone else or presents irregular tenancy	0.491	0.030	1.63	1.05; 2.55
Adolescent is abused by siblings	0.396	0.014	1.49	1.09; 2.04
Mother was less than 18 or over 35 years of age when the student was born	0.524	0.012	1.69	1.12; 2.55
Student has repeated a year of school	0.510	0.001	1.67	1.25; 2.23
Neurotic personality traits	0.334	0.023	1.40	1.05; 1.86
Presence of physical disabilities	0.314	0.034	1.37	1.02; 1.83
Does not feel a bond with friends	0.588	0.000	1.80	1.30; 2.48
Does not feel comfortable at school	0.455	0.020	1.58	1.07; 2.32
Does not feel accepted by classmates	1.231	0.000	3.42	2.53; 4.62
Spends less than two hours a day with friends	0.635	0.002	1.89	1.25; 2.83

Source: Own elaboration based on primary data.

Note: Constant: -8.764. Hosmer-Lemeshow Test ( $\chi^2$ : 7.227; degrees of freedom: 8; statistical significance: 0.512).

RC = regression coefficient; SS = statistical significance; PR = prevalence ratio; 95% CI = 95% confidence interval.

Finally, Table 5 shows the results of the multivariate analysis performed with the 14 factors that were included in the previously constructed models. Of these 14 factors, eleven were included in the final model (with an acceptable fit with the data of the sample, with a *p*-value of 0.51), highlighting the factors related to the adolescent's personal characteristics as the most relevant, particularly spending less than two hours per day with friends and not sharing a bond with them – these factors increased the adolescent's probability of being a victim of school bullying by over 80% – and, most importantly, not feeling accepted by schoolmates, which tripled the probability of being a victim.

## DISCUSSION

According to Filmus, studies on school violence can be grouped into three major perspectives,

depending on the “level of aggregation of social factors” (19 p.28): structural, institutional, and interpersonal (the level at which school bullying can be understood). Authors that provide information on each of these perspectives – from the macro-social to the micro-social – all acknowledge in some way the existence of the different levels and their interdependence, although the emphasis may be placed on one particular level.

This study has focused on adolescents, who are subjected to situations and/or people that confer upon them the status of victim. The advantage of using a risk factor approach – such as the one adopted here – is that the association of each factor with the status of victim can be quantified and an intervention can be efficiently made. Among the limitations of this study we should point to the dangers of granting a passive status to the individual, as well as failing to deal with macro-social or contextual aspects: although high levels of criminal violence in Mexico are known to create a backdrop prone to generating school violence, no direct relation has been established.

In order to assess possible selection bias, the sample was compared to the studied population (the students of state secondary schools in the Guadalajara metropolitan area) based on the variables of gender, age, grade, and school shift, applying a  $\chi^2$  test. Statistically speaking, no significant differences were found between these groups, and therefore no selection bias was present in the sample.

The prevalence of school bullying found in this study reflects the relevance of this phenomenon for the population under review. About 18% of adolescents are victimized in secondary school; that is to say, they are frequently or constantly subject to some kind of aggression. The interval 15.8%-19.5% (95% CI) approximates the result of 20.5% obtained in Tamaulipas, Mexico (20). However, it is lower than the 23% figure reported in the Federal District (21), as well as the figures reported by the National Survey of Student Health (ENSE) [*Encuesta Nacional de Salud de Escolares*], which found a prevalence of physical or verbal aggression of 25.3% nationwide and 32% in Jalisco (22).

Comparisons of the prevalence of harassment suffered by adolescents in the metropolitan area of Guadalajara with other Latin American cities

reveal the following: it was higher than the 5.4% prevalence in the 26 capitals of Brazilian states found by Carvalho (6); the 8.0% to 12.0% prevalence uncovered by the Argentine Observatory of School Violence [*Observatorio Argentino de Violencia en las Escuelas*] (23); the 2.5% prevalence stated in a report by Spain’s Reina Sofia Center (4) (these last two cases are based on nationwide surveys); the 14.5% found by Cepeda for Ciudad Bolívar, Colombia (24); and the 1.45% prevalence of frequent abuse in metropolitan Santiago de Chile reported by Iriarte (25). On the other hand, it is lower than the results of a national sample taken in Venezuela (31.5%) (26), and in the schools of Lima, Peru (48.0%) (5).

Comparisons of school bullying in the Latin American context are complicated not only by the variations that arise when dissecting the phenomenon itself but also by the differences in study design and implementation. That is, the ways of classifying different forms of aggression, the variety of instruments or quantitative criteria applied, the various statistical models used, or the different characteristics of the adolescent population being compared – such as the existence of higher immigrant populations or greater ethnic heterogeneity, which can cause aggressive social behaviors arising from social exclusion or discrimination (27). These aspects, in conjunction, allow us to explain differences in findings.

On the other hand, given that this was a cross-sectional study, it is clear that a relation of precedence – and therefore a causal relation – between the analyzed victimogenous factors and the status of victim of school bullying cannot be established in all cases. Nonetheless, the statistical associations found between a number of studied factors and an individual’s status of victim of school bullying do provide important guidelines for understanding this phenomenon.

The models built for each subgroup that best fit with the data of this study were those related to the micro-social interactions of the adolescents with their families and in school and the objective and subjective characteristics of the adolescents.

It is clear that certain variables were more closely associated with being a victim of school bullying than others. While these may be looked at in a molar sense for explanatory purposes, the warning signs presented by each factor retain their



relevance for focusing interventions and designing more specific or more general actions.

If “every man has three different characters: the one he shows publicly, the one he truly possesses, and the one he believes he has” (28), the shift from one of these to the other in adolescents can be very rapid. Their relationships to their own bodies are based on observations of the bodies of others – their peers – whose development may be quite dissimilar. Observing clear markers of masculinity or femininity in the bodies of their peers and not having these features themselves, or believing that they do not, can make a difference in adolescents’ self-perception and confidence. Adolescent victims are less satisfied with their bodies and with their academic performance, and are more prone to suffer from stress. Possessing neurotic traits (stemming from emotional insecurity, instability, and anxiety) as a personal characteristic increases the risk of becoming a victim.

It is also important to note the intersubjective processes that form part of becoming a person for adolescents, as well as the impairment produced by exclusion from the *essence of human nature*: social interaction. Not feeling accepted by schoolmates was the factor with the greatest prevalence ratio in this study. Quality interactions among adolescents and friendship bonds have been reported to strengthen the sense of self-confidence, trust in peers, and self-esteem, as well as to help develop processes of identity consolidation (29-31). The possibility of being chosen by peers to become friends underscores the capacity for developing intimacy and a positive attitude towards establishing social relationships (32). Being and making oneself eligible for this are positions that are intrinsically linked. Yet, they do not necessarily occur spontaneously, and therefore schools must create inclusive environments suitable for social interactions.

Although rarely discussed, relations among siblings are significant to physical and social processes outside the family, and may favor personal development (33). In fact, certain motor and linguistic skills are learned from siblings, along with the capacity to develop a sense of group membership (34). However, when the family constitutes a source of instability due to the daily exercise of violence among its members, the younger members – children and adolescents – experience this as an impact to their mental health, especially

when they are abused by their siblings, which causes emotional imbalance (35,36).

Abusive relationships with peers or siblings are incorporated as part of an individual’s early memories of violence. Depending on the case, this can lead to the internalization of the role of victim, causing the adolescent’s suffering in school to become a “fulfilled prophecy” (36 p.138). Intimidation among siblings seems to have a greater prevalence than previously thought, as well as several short- and long-term consequences. Duncan (37) found that almost 38% of victims of school bullying were also victims of abuse on the part of their siblings.

The victim’s lack of group integration with respect to classmates and/or friends is a common element, and forms the backdrop to three other factors that appear in the model: feeling uncomfortable at school, not sharing bonds with friends, and spending little time with them. It is possible that conflictual sibling relationships may contribute to generating feelings of isolation, which then become evident in the classroom (25).

Although the institutional level was not considered as an aspect of this research, during the observation phase some aspects of the school organization were perceived *in situ* as being unfavorable to the establishment of friendships or bonds of trust and collaboration. Studies like those conducted by Cancino (38), Cornejo (39), and Kornblit (40) consider the importance of psycho-social environments in making schools into spaces conducive to healthy social interactions.

The social experience acquired through peer interaction is essential for development, but it does not replace the contribution made by the two most important socializing agents: the family and the school. The data collected to some extent support Duschatzky and Corea’s thesis on the decline of these institutions based on the “deterioration of their role as spaces for the construction of meaning” (41).

There are many forms of archaic inequality that persist in families and in schools, evidenced through tangible material possessions as well as exclusionary forms of exercising authority and/or citizenship within the contemporary political context.

Macro-social determinants (economic and demographic contexts) impact everyday life for families. Thus, poor housing conditions – living in

a house owned by someone else or staying with others – have an impact on adolescents in the form of stress and parental depression due to the lack of material resources (42). It is not only about the lack of housing, but also about limited opportunities.

Low levels of education, especially on the part of the father, explains first integration into the labor market in occupations that do not demand high qualifications – and therefore tend to pay low salaries – and secondly the narrow margin of advantage gained to appropriate for themselves a good – education – that would increase their cultural capital (43). Parents' educational levels – and membership in a given socioeconomic group – provide guidelines for how to deal with different school-related matters (44): from using language to mobilize information, to confronting experiences with school authorities, and even gaining a better understanding of the way in which adolescents relate to one another. The large proportion of adolescents participating in the study whose parents had six years of schooling or less gives an notion of the extent of this situation in the metropolitan area of Guadalajara and of the possible consequences it may have for the adequate development of adolescents.

*Knowing how and what to teach one's child about the moral order of society and how to bring them into it become difficult when the signs of cohesion in the adult world begin to collapse. The rapidity with which this shift in roles occurs*

exceeds their comprehension and capacity for adaptation (41).

On the other hand, the argument that the school system provides possibilities for achieving upward social mobility is hard to sustain: the context belies the theory. The fact that increasing numbers of children are enrolled in schools may simply indicate that schools are fulfilling the function of "day care center," rather than guaranteeing a better quality of life (41).

To summarize, the "hard data" reveal that adolescents who experience multiple deprivations (economic, social, affective, emotional) are in a state of vulnerability, making them targets for becoming revictimized at school. As mentioned above, it is not possible to confirm that the analyzed factors lead to victimization; however, there is evidence for the existence of a learned victim role – acquired inside or outside the school system – and the need for more comprehensive measures for dealing with and preventing victimization and abuse.

In this sense, school staff (teachers and administrators), parents, and policymakers (of social, educational, and health policy) should consider adolescents' level of exposure to the factors identified in this study if they wish to implement successful strategies for reducing school bullying and strive to create environments that encourage the development of adolescents within their families and at school.

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## BIBLIOGRAPHIC REFERENCES

1. Dahlberg LL, Krug EG. La violencia, un problema mundial de salud pública: Informe mundial sobre la violencia y salud. Washington DC: Organización Panamericana de la Salud, Organización Mundial de la Salud; 2003.
2. Krauskopf D. Estado del arte de los programas de prevención de la violencia en ámbitos escolares. Washington DC: Organización Panamericana de la Salud, GTZ; 2006.
3. Olweus D. Bullying at school: what we know and what we can do. Oxford: Blackwell; 1993.
4. Serrano A. Acoso y violencia en la escuela: Cómo detectar, prevenir y resolver el bullying. Barcelona: Ariel; 2006.

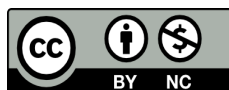
5. Oliveros M, Barrientos A. Incidencia y factores de riesgo de la intimidación (bullying) en un colegio particular de Lima-Perú. *Revista Peruana de Pediatría*. 2007;60(3):150-155.
6. Carvalho D, Iossi MA, Carvalho F, Monteiro RA, Monteiro L, Crespo C, Gomes M, Silva MMA, Lopes D. Bullying in Brazilian schools: results from the National School-based Health Survey (PeNSE) 2009. *Ciência e Saúde Coletiva*. 2010;15(2):3065-3076.
7. Román M, Murillo FJ. América Latina: violencia entre estudiantes y desempeño escolar. *Revista CEPAL*. 2011;(104):37-54.
8. Vega MG, González GJ. Harsh treatment or violence?: The relationship between adolescents in school. Presented at: XVII ISA World Congress of Sociology; 11-17 jul 2010; Gothenburg, Sweden.
9. Gini G, Pozzoli T. Association between bullying and psychosomatic problems: a metaanalysis. *Pediatrics*. 2009;123(3):1059-1065.
10. Roland E. Bullying, depressive symptoms and suicidal thoughts. *Educational Research*. 2002;44(1):55-67.
11. Rodríguez-Manzanera L. ¿Cómo elige un delincuente a sus víctimas?: Victimización sexual, patrimonial y contra la vida. México: INACIPE; 2011.
12. Finkelhor D, Asdigian N. Risk factors for youth victimization: beyond a lifestyles/routine activities theory approach. *Violence and Victims*. 1996;11(1):3-19.
13. Instituto Nacional de Estadística, Geografía e Informática (INEGI). Censo General de Población y Vivienda, 2010 [Internet]. México: INEGI [cited 10 ene 2013]. Available from: [http://www.inegi.org.mx/sistemas/olap/Proyectos/bd/censos/comparativo/PDS.asp?s=est&c=17161&proy=sh\\_pty5ds](http://www.inegi.org.mx/sistemas/olap/Proyectos/bd/censos/comparativo/PDS.asp?s=est&c=17161&proy=sh_pty5ds)
14. Avilés JM. Bullying: Intimidación y maltrato entre el alumnado. País Vasco: Stee Eilas; 2002.
15. Ortega R, Mora JA, Mora J. Cuestionario sobre intimidación y maltrato entre iguales. Sevilla: Universidad de Sevilla; 2005.
16. Collell J, Escudé C. Maltractament entre alumnes (I): Presentació d'un qüestionari per avaluar les relacions entre iguals, CESC Conducta i experiències socials a classe. *Àmbits de Psicopedagogia*. 2006;(18):8-12.
17. Trianes MV, Blanca MJ, Muñoz A, García B, Cardelle-Elawar M, Infante L. Relaciones entre evaluadores de la competencia social en preadolescentes: Profesores, iguales, autoinformes. *Anales de Psicología*. 2002;18(2):197-214.
18. Fleiss JL. *Statistical methods for rates and proportions*. 2nd ed. New York: Wiley; 1981.
19. Filmus D. Enfrentando la violencia en las escuelas: Un informe de Argentina. In: *Violência na escola: América Latina y Caribe*. Brasilia: UNESCO; 2003.
20. Joffre-Velázquez VM, García-Maldonado G, Saldívar-González AH, Martínez-Perales G, Linochoa D, Quintanar-Martínez S, Villasana-Guerra A. Bullying en alumnos de secundaria: Características generales y factores asociados al riesgo. *Boletín Médico del Hospital Infantil de México*. 2011;68(3):193-202.
21. Tello N. La socialización de la violencia en las escuelas secundarias. *Revista Mexicana de Investigación Educativa*. 2005;10(27):1165-1181.
22. Shamah-Levy T, editora. *Encuesta Nacional de Salud en Escolares 2008*. Cuernavaca: INSP; 2010.
23. Observatorio Argentino de Violencia en las Escuelas. *La violencia en las escuelas: Un relevamiento desde la mirada de los alumnos*. Buenos Aires: Ministerio de Educación de la Nación; 2007.
24. Cepeda-Cuervo E, Pacheco-Durán PN, García-Barco L, Piraquive-Peña CJ. Acoso escolar a estudiantes de educación básica y media. *Revista de Salud Pública*. 2008;10(4):517-528.
25. Iriarte M. Conductas de intimidación y maltrato entre iguales en una muestra de estudiantes de enseñanza media de la región metropolitana. *Ciencia Psicológica*. 2008;2(1):6-15.
26. Muula AS, Herring P, Siziya S, Rudatsikira E. Bullying victimization and physical fighting among Venezuelan adolescents in Barinas: results from the Global School-Based Health Survey 2003. *Italian Journal of Pediatrics* [Internet]. 2009 [cited 20 ene 2011];35. Available from: <http://www.ijponline.net/content/35/1/38>.
27. Abramovay M, coordinador. *Cotidiano das escolas: entre violências* [Internet]. Brasilia: UNESCO, Observatório de violências nas escolas, Ministério da Educação; 2006 [cited 20 Jan 2013]. Available from: <http://unesdoc.unesco.org/images/0014/001452/145265por.pdf>.
28. Karr A. *Les guêpes* [Internet]. Paris: Michel Lévy Frères; 1949 [cited 22 Jan 2013]. Available from: <http://archive.org/stream/lesgupesrie00karrgoog#page/n7/mode/2up>.

29. Berndt TJ. Exploring the effects of friendship quality on social development. In: Bukowski WM, Newcomb AF, Hartup WW, editors. *The company they keep: Friendship in childhood and adolescence*. New York: Cambridge University Press; 1996.
30. SunWolf, Leets L. Communication paralysis during peer-group exclusion: Social Dynamics that prevent children and adolescents from expressing disagreement. *Journal of Language and Social Psychology*. 2003;22(4):355-384.
31. Aboud FE, Mendelson MJ. Determinants of friendship selections and quality: Developmental perspectives. In: Bukowski WM, Newcomb AF, Hartup WW, editors. *The company they keep: Friendship in childhood and adolescence*. Cambridge: Cambridge University Press; 1996.
32. Bruyn EH, Cillessen AH, Wissink IB. Associations of peer acceptance and perceived popularity with bullying and victimization in early adolescence. *Journal of Early Adolescence*. 2010;30(4):543-566.
33. Johnson SC, Chen FS. Socioemotional information processing in human infants: From genes to subjective construals. *Emotion Review*. 2011;3(2):169-178.
34. Vega-López MG, González-Pérez GJ. La vida y el desarrollo en la pobreza: Un estudio sobre el desarrollo psicomotor y del lenguaje en niños menores de 5 años de San Martín de las Flores. Guadalajara: Cuéllar; 2002.
35. Hoffman KL, Kielcot KJ, Edwards JN. Physical violence between siblings: A theoretical and empirical analysis. *Journal of Family Issues*. 2005;26(8):1103-1130.
36. Whipple EE, Finton SE. Psychological maltreatment by siblings: An unrecognized form of abuse. *Child and Adolescent Social Work Journal*. 1995;12(2):135-145.
37. Duncan RD. Peer and sibling aggression: An investigation of intra- and extra- familial bullying. *Journal of Interpersonal Violence*. 1999;14(8):871-886.
38. Cancino T, Cornejo R. La percepción del clima escolar en jóvenes estudiantes de liceos municipales y particulares subvencionados de Santiago: Un estudio descriptivo y de factores asociados. [Tesis de grado en Psicología]. Santiago: Universidad de Chile; 2001.
39. Cornejo R, Redondo J. El clima escolar percibido por los alumnos de enseñanza media: Una investigación en algunos liceos de la Región Metropolitana. *Última Década* [Internet]. 2001 [cited 20 ene 2013];15:11-52. Available from: [http://www.scielo.cl/scielo.php?script=sci\\_arttext&pid=S0718-22362001000200002](http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0718-22362001000200002).
40. Kornblt AL, coordinador. *Violencia escolar y climas escolares*. Buenos Aires: Biblos; 2008.
41. Duschatzky S, Corea C. *Chicos en banda: Los caminos de la subjetividad en el declive de las instituciones*. Buenos Aires: Paidós; 2002.
42. Cairney J. Housing tenure and psychological well-being during adolescence. *Environment and Behavior*. 2005;37(4):552-564.
43. Bourdieu P, Passeron JC. *La reproducción: Elementos para una teoría del sistema de enseñanza*. Barcelona: Laia; 1981.
44. McNamara HE, Weininger EB, Lareau A. From social ties to social capital: Class differences in the relations between schools and parent networks. *American Educational Research Journal*. 2003;40(2):319-351.

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