# Correlation of Bullying and Mental Health Disorders among High School Students in one school in Quito

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## ABSTRACT

**Objective**

Determine the prevalence of bullying and correlation with mental health difficulties among High School students of a private school setting in a sub-urban area of Quito, Ecuador.

**Methods**

This is a cross-sectional study of 321 High School children attending a private school in sub-urban Quito, Ecuador. Students filled out the Safe Schools Questionnaire and the Strengths and Difficulties Questionnaire in order to asess bullying behavior by self-report and identify any risk of mental health difficulties as well.

**Results**

There was a prevalence of 36.8% of children involved in bullying in High School, being 5.6% as victims, 11.2% as bullies, and 19.9% as bully/victims. Troubled children (Victims, Bullies, and Bully/Victims); presented a higher risk for any mental health difficulty than witness OR: 3.28 (1.68 to 6.43). Troubled children also presented a higher risk for Hyperactivity Disorder than witness OR: 3.45 (1.28 to 9.27) and for behavioral disorder OR: 2.63 (1.12-6.17). Troubled children presented higher possibilities of Impact of any Mental Health Difficulty when compared to witness OR: 3.45 (1.28 to 9.27). The results obtained regarding to Mental Health Difficulties by each categorization group evidenced a higher risk for any Mental Health Disorder in victims, OR: 3.14(1.01-9.79) bullies, OR: 4.10(1.70-9.88) and bully/victims, OR: 2.87(1.30-6.38).Bully/victims also present a higher risk for behavioral disorders OR: 2.90(1.09-7.70), and all categories a higher risk for Impact: victims OR: 7.75(2.55-23.52) bullies OR: 4.28(1.56-11.75) and bully/victims OR: 4.34(1.81-10.38).

**Conclusions**

Bullying is a significant problem associated with mental health difficulties, among the study group. Bullying needs to be seriously addressed in the school system also as a community-based matter.



**Keywords:** Bullying; Mental Health; Children; Prevention

## INTRODUCTION

Bullying is an action or a series of actions intended to intimidate, assault or manipulate a person or a group of people during a specific period of time.[32]It can be defined as the aggression of a stronger person against a weaker one.[26] Bullies tend to be aggressive and impulsive.[26] Victims are submitted to chronic, pervasive aggression and may present academic, emotional and social disadvantages[32] Bully/victims are those who pick-on or harass others but are also themselves the victims of aggression. [32] This group presents the worst prognosis regarding intervention [32-14]

Involvement in bullying ranges from 9% to 54% [25]. However the prevalence of bullying in Ecuador remains uncertain and it´s correlation with mental health difficulties if any, has not yet been explored.

Several studies have been able to show a causal effect of involvement in bullying and mental health difficulties that can sustain into adulthood. Victims report high rates of anxiety, depression, and greater psychosomatic symptoms compared to controls.[9-13-31-23-5] Bullies may develop attention problems, hyperactivity, conduct problems, alcohol or illicit drug consumption, aggression, violent and anti-social behavior, increased risk taking, weapon carrying, and physical fighting.[9-13-15-21-22-23-24] Bully/ Victims have been shown in multiple studies to actually be the group at highest risk. They generally share the same risks of victims and bullies, also: self-destructive or identity problems, suicidality, suicide attempts, and eating disorders.[9-13-14-16-15-18-19-22-30]

## OBJECTIVE

To determine the prevalence of bullying behavior in High School and it´s relation if any with mental health problems in children attending High School.

## METHOD

This is a cross sectional study that included students attending High School of a private school in a sub-urban area of Quito, Ecuador. Students filled out a Safe Schools Questionnaire and the Strengths and Difficulties Questionnaire that assessed bullying behavior and mental health difficulties as well.

Data was collected from a socio-economic and ethnically homogeneous sample of 321 children who were enrolled in in High School. Only students attending school regularly were eligible to participate. They participated after anonymity and confidentiality were assured.

Previously, school staff, parents and students from High School attended specific workshops appropriately designed and modified according to academic backgrounds and specific needs.

Two different questionnaires were applied for the study; the first one was the Safe School Questionnaire [28]

The second questionnaire is the self reported Strengths and Difficulties Questionnaire [11-1-12]. It has 94.6% of specificity and 63.3% of sensitivity to detect child and adolescent psychopathology. [11-1-12]

**Outcome Measure**

In this a cross sectional analytical study, the independent variable was the category of bullying in which participants were classified. Outcome measures were the different categories of mental health difficulties and the impact of any mental health difficulties in children's life.

**Statistical Analysis**

The statistical analysis was conducted with two software packages: SPSS (release 12 for windows; SPSS, Chicago, IL, USA) and EPI INFO 6.04 for DOS. Descriptive statistics were calculated as percentages, means and standard deviations. Comparisons on categorical data were determined by calculating the Odds ratios with 95% confidence interval. The Cornfield method, as well as the Exact Limits method was calculated when appropriate. We also applied the Yates corrected $chi^2$ Test and Fisher Test when required, to establish differences between percentages and P-values $< 0.05$ were considered statistically significant. P values were not adjusted for multiple comparisons.

**Ethical Considerations**

Student's participation was voluntary. Confidentiality and anonymity were granted. The School Principal, the Dean, the Anti-bullying School Committee and the School Psychologists consent with the study, and and informed consent to participate was obtained. [4] The Ethical Committee of the Universidad San Francisco de Quito approved this investigation.

## RESULTS

A total of 321 students belonging to a medium high and high socio-economical class and mostly Ecuadorean attending High School (n=321) filled out both questionnaires mentioned before. The response rate was of 89.72 %.

The population consisted of 168 males (52.33%); 147 (45.79%) females and 6 (1.87 %) children who did not answer to the questions regarding their age and sex, but answered to all the remaining questions. These children were excluded from analysis of the SDQ as sex and age are requirements for data analysis.

The total sample was categorized in 4 groups: victims, bullies, bully/victims and witnesses. Children involved in bullying as victims, bullies or bully/victims were grouped as troubled children. The total frequency of troubled children was 36.76 %. Boys identified as troubled children significantly outweighed girls, with a frequency of 26.16 % and 9.96 % respectively, (p= 0.001) Table 1- 2.

The most common form of bullying reported was “I was teased in an unpleasant way” followed by “I was harassed even after I asked them to stop”. The most common form of bullying in bullies and bully/victims was “left someone out on purpose”, followed by “teased someone in an unpleasant way”. Through victim’s perspective, a boy by himself and a group of mainly boys were identified as the most prevalent perpetrators. For bully’s, bullying episodes were basically achieved in groups: with one other person, with a group of mainly boys, and finally with a group of mainly girls (Table 3).

The most common places where bullying occured were hallways, outside, and in the classroom (Table 4). Victimized children identified hallways and classrooms as unsecure places. Victimized children refered that they evidenced less or no interventions of teachers when bullying occurred and 47.62% of victims stated that they felt that school was a safe scenario.

### Correlation of Mental Health Disorders within Categorization Groups: Trouble and Witness

Troubled children presented a higher risk for any mental health difficulty than witness OR: 3.28 (1.68 to 6.43). Troubled children also presented a higher risk for Hyperactivity Disorder than witness OR: 3.45 (1.28 to 9.27) and for behavioral disorder OR: 2.63 (1.12-6.17). Troubled children presented higher possibilities of Impact for any Mental Health Difficulty when compared to witness OR: 3.45 (1.28 to 9.27).

**Correlation of Mental Health Disorders within each Categorization Group:**

The results obtained regarding to Mental Health Difficulties by each categorization group evidenced a higher risk for any Mental Health Disorder in victims, OR: 3.14(1.01-9.79) bullies, OR: 4.10(1.70-9.88) and bully/victims, OR: 2.87(1.30-6.38). Bully/victims also present a higher risk for behavioral disorders OR:2.90(1.09-7.70), and all categories a higher risk for Impact: victims OR: 7.75(2.55-23.52) bullies OR: 4.28(1.56-11.75) and bully/victims OR: 4.34(1.81-10.38).

**DISCUSSION**

The prevalence of involvement in bullying was of 36.8% in High School, this prevalence follows previous reports, however in the highest range[25].

The very high rate of bully/victims in High School is unusual. However, most of the previous studies of bully/victims come from industrialized countries; this study is based in a country where bullying is a new concept and it´s consequences are just starting to be learnt.

Fifty percent of males and 21.8% of females were involved in bullying behavior. Regarding victimization, a slightly higher percent of females were victims than percent of males. The finding of girls being equally victimized is found in several studies as stated in research by Delfabbro et al [5] although there are other studies that show that boys are more frequently victims.[24-6]

The prevalence of bullying behavior decreased with each grade, 9th grade with 40.7%, and 39.7%, 36.5%, and 30.9% in $10^{th}$, $11^{th}$, and $12^{th}$ grades respectively as shown in several studies.

The most common form of bullying reported was “I was teased in an unpleasant way,” 63.4% and “I was kicked or hit,” was the $4^{th}$ most common at 23.2%. In a Korean Middle School study, verbal abuse, coercion, and exclusion all occurred with a similar prevalence that was higher than physical abuse. A study in India also examined the types of bullying reported by victims showing the most common type reported was teasing, with a prevalence of 81%, and physical violence was reported by 16% of the times. [18,20]

The three most common places according to both victims and bullies were in the hallways, outside, and in the classrooms. Previous studies have reported that the three most common locations of bullying in secondary schools are hallways, playgrounds, and classrooms. [10] Glew et al [10] cited a study by Perry et al [27] that showed that schoolyard aggression is inversely related to the number of supervisors on duty.

Bullying was perpetrated 42.6% of the time, with a group of mainly boys; 28.7% with another person; 17.8% with a group of mainly girls and 16.8% teased alone.

Victims reported similar data to the bullies, the three most common were a group of mainly boys, a group of mainly girls, and a boy by himself.

Only 12.2% of High School victimized children sought for help from an adult and only 5% of bullies felt teachers noticed bullying and only 35% responded that teachers try to stop it. Bullies and victims reported in 28%, that other students had tried to stop bullying.

This study was able to assess the percentage of children at a medium or high risk for developing various mental health disorders.

All groups had a higher risk of any mental health difficulty compared to witnesses. Troubled children had statistically a significant higher risk of mental health disorders compared to witnesses, 3.28 (1.68 to 6.43). When bullying behavior was categorized the risk of any mental health disorder were as follows: Victims: 3.14 (1.01 to 9.79); Bullies: 4.10 (1.70 to 9.88); Bully/victims 2.87 (1.29 to 6.38). Based on previous studies, our results are as expected, with each group showing higher risk for mental health disorders compared to witnesses. [9-13-16-21-22] However, recent literature shows that bully/victims are often the most affected. [13-14-15-19-23]

High School children tended towards having an increased risk for emotional problems, however, not statistically significant, for troubled children or any individual group when compared to witnesses.

Troubled children had significantly a higher risk of behavioral problems compared to witnesses OR:2.63 (1.12 to 6.18). Gini [9] in Elementary School children, was able to show conduct problems for both victims (OR:2.43) and bully/victims (2.41), but not bullies.

Results also show a significant risk of hyperactivity among High School bullies OR: 5.00 (1.52-16.49). Troubled students also had a greater risk for hyperactivity when compared to witnesses (OR:3.46 (1.28 to 9.28). Prior studies have shown correlation between being involved in bullying, especially bullies and bully/victims groups, and hyperactivity or decreased attention. [13-23]

A high impact was related to bullying behavior. Not only do these children show greater risk of having mental health difficulties, but also having a negative impact in their lives.

Results obtained do not enable to determine whether bullying is an occasional or chronic behavior. But, not only is there a fairly high prevalence of bullying, but it also has a great impact on mental health of those involved. Still, several school based interventions have demonstrated to be successful in attenuating negative effects of bullying and victimization. [2-29-3-33]

A low response was evidenced when students were asked about what could be done to stop bullying (20.9%). Students felt they could be part of the solution and suggested teachers being more aware to active bullying. Rees [28] also found that students felt it was educators' responsibility to provide respect in schools.

**Limitations**

Several limitations have been found for example: conclusions were gathered from students from middle-high and high socio-economic class; being the sample size small, the power of the study decreased, not having statistical significance in some instances; although fluent English was spoken, there was no Spanish version for the Safe Schools Questionnaire and psychometric properties were not assessed. This could cause some variations compared to other studies where English is the first language. The self-report version applied of the SDQ questionnaire could also lead to bias. And finally, being this study a cross-sectional analysis no causal relationship between mental health difficulties and bullying can be done, it only stated whether each other were associated.

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**Table 1: Bullying behavior in High School according to gender.**

| Gender | V<br>*n = 18* | (%)<br>5.61 | B<br>*n = 36* | (%)<br>11.21 | B/V<br>*n = 64* | (%)<br>19.94 | W<br>*n = 203* | (%)<br>63.24 | TOTAL[1]<br>321 | (%)<br>100.00 |
|---|---|---|---|---|---|---|---|---|---|---|
| male | 9 | (2.80) | 22 | (6.85) | 53 | (16.51) | 84 | (26.17) | 168 | (52.34) |
| female | 9 | (2.80) | 12 | (3.74) | 11 | (3.43) | 115 | (35.83) | 147 | (45.79) |
| Non responders | 0 | - | 2 | (0.62) | 0 | - | 4 | (1.25) | 6 | (1.87) |

V = victims; B = bullies; B/V = bully/victims; W = witness

TOTAL[1] = Total Sample.

**Table 2: Bullying behavior in High School according to age**

| Grade (age) | V | (%) | B | (%) | B/V | (%) | P-value | W | (%) | Total | (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 ( 14-15) | 6 | (7.41) | 14 | (17.28) | 13 | (16.05) | 0.135 | 48 | (59.26) | 81 | (100.00) |
| 10 (15-16) | 2 | (2.94) | 4 | (5.88) | 21 | (30.88) | 0.000 | 41 | (60.29) | 68 | (100.00) |
| 11 (16-17) | 5 | (5.88) | 7 | (8.24) | 19 | (22.35) | 0.001 | 54 | (63.53) | 85 | (100.00) |
| 12 (17-18) | 5 | (6.17) | 10 | (12.35) | 10 | (12.35) | 0.328 | 56 | (69.14) | 81 | (100.00) |
| no response | 0 | - | 1 | (16.67) | 1 | (16.67) | | 4 | (66.67) | 6 | (100.00) |
| Total | 18 | (5.61) | 36 | (11.21) | 64 | (19.94) | | 203 | (63.24) | 321 | (100.00) |

V = victims; B = bullies; B/V = bully/victims; W = witness TOTAL[1] = Total Sample per group.

**Table 3: Comparison of most frequents forms of bullying in High School according to views of victims and bullies.**

| | HS | |
|---|---|---|
| **FORMS OF BULLYING VICTIM´S VIEW** | **V+B/V n=82** | **(%)** |
| I was teased in an unpleasant way | 52 | (63.41) |
| I was harassed even after I asked them to stop | 21 | (25.61) |
| I was called gay or lesbian | 22 | (26.83) |
| **FORMS OF BULLYING AGGRESSOR´S VIEW** | **B+B/V n=100** | **(%)** |
| You left someone out on purpose | 44 | (44.00) |
| You teased someone in an unpleasant way | 59 | (59.00) |
| You called others hurtful names | 45 | (45.00) |

HS= High School; V= victims; B = bullies; B/V = bully/victims.

**Table 4: Comparison according to views of victims and bullies regarding the places where bullying occurs more frequently**

| | HS | |
|---|---|---|
| **Places of bullying occurrence: victim's view** | **V n= 84** | **(%)** |
| happened in the hallways | 30 | (63.83) |
| happened outside | 20 | (42.55) |
| happened in the classroom | 24 | (51.06) |
| **Places of bullying occurrence: aggressor's** | **B n= 100** | **%** |
| happened in the hallways | 46 | (46.00) |
| happened outside | 37 | (36.00) |
| happened in the classroom | 34 | (34.00) |

HS= High School; V= Victims; B = Bullies; N/S = non significant.