

## Peer bullying and disruption-coercion escalations in student-teacher relationship

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### Abstract

**Background:** Although there have been many studies of bullying, few have linked it with the escalation of disruption-coercion that sometimes occur in the classroom. Understanding this relationship is the aim of this research. **Method:** The study included 22114 Spanish adolescents, aged 12 to 18 years (mean age = 14.22, SD = 1.41). 49.6% were boys (mean age = 14.26, SD = 1.41) and 50.4% were girls (mean age = 14.20, SD = 1.40). The design was a sample survey with stratified cluster sampling. Data were analyzed by latent class analysis. **Results:** Based on direct involvement in bullying, five groups were detected: non-participants, bullies, followers, victim-bullies and victims. Involvement in bullying is associated with lower appraisal of school norms and a more negative perception of interaction with teachers, which seems to cause disruption and coercion escalations. We found differences in this respect among groups involved in bullying and non-participants. **Conclusions:** The results reflect the need to try to prevent these two problems conjointly, teaching students to reject all forms of violence and, through more effective treatment of disruption, to prevent or stop escalation at early stages.

**Keywords:** Bullying, disruption, coercion, teacher-student interaction, latent class analysis.

### Resumen

**Acoso escolar y escaladas de disrupción-coerción en la interacción profesor-alumno. Antecedentes:** aunque se han realizado muchos estudios sobre el *bullying*, pocos lo han relacionado con las escaladas de disrupción-coerción que a veces se producen en las aulas. Comprender dicha relación es el objetivo de esta investigación. **Método:** participaron en el estudio 22.114 adolescentes españoles con edades entre 12 y 18 años (edad media= 14,22; D.T.= 1,41). 49,6% fueron chicos (edad media= 14,26; D.T.= 1,41) y 50,4% chicas (edad media= 14,20; D.T.= 1,40). El diseño fue de encuesta con muestreo de conglomerados estratificado. Los datos fueron analizados con análisis de clases latentes. **Resultados:** la participación directa en el *bullying* permitió detectar cinco grupos: no implicados, acosadores, seguidores, víctimas agresivas y víctimas pasivas. Participar en el acoso se relaciona con una peor valoración de las normas de la escuela y una percepción más negativa de la interacción con el profesorado, que parece originar escaladas de disrupción y coerción, detectándose diferencias entre los grupos. **Conclusiones:** los resultados reflejan la necesidad de tratar de prevenir conjuntamente estos dos problemas, enseñando a rechazar toda forma de violencia y a través de un tratamiento más eficaz de la disrupción, para prevenir o frenar las escaladas desde su inicio.

**Palabras clave:** acoso escolar, disrupción, coerción, interacción profesor-alumno, análisis de clases latentes.

Despite having been largely ignored, bullying among school children is now the subject of a good deal of research, frequently following the concept and the evaluation methodology proposed in the pioneering work by Olweus (1978), who understood bullying among school children as a type of violence that: (a) includes behaviours of different kind (not only physical, but also verbal and indirect aggression); (b) is repeated and prolonged; and (c) occurs in a relationship of power disequilibrium between bullies, who are often supported by a group of followers, against victims, who cannot escape from the situation by themselves. Two changes had extended this definition: the inclusion of bullying behaviours through new technologies (Ortega-Ruiz & Núñez, 2012; Smith et

al., 2008), and the consideration of bullying as a group process (Espelage & Swearer, 2009; Lucas, Pulido, & Solbes, 2011). Studies from this perspective consider bullying as a kind of power, based on dominance and fear (Vaillancourt, McDougall, Hymel, & Sunderani, 2009), consequence of a large process of socialization (Díaz-Aguado, Martínez, & Martín, in press; Sullivan, Cleary, & Sullivan, 2004), and reinforced by rules in the peer group micro-system (Salmivalli & Voeten, 2004). On the other hand, most studies have found, as in other types of violence, that boys use more aggression than girls (Olweus, 1978; Díaz-Aguado et al., in press).

Bullying is a way of exercising power towards helpless victims, characterized for their isolation (Cook, Williams, Guerra, Kim, & Sadek, 2010) and other characteristics that make them more vulnerable.

Bullies can be distinguished from their peers by a pronounced tendency to abuse their strength (Olweus, 1993), disruption (Kokkinos & Panayitou, 2004) and other externalizing behaviours (Cook et al., 2010), intolerant attitudes and high degrees of

justification of violence (Díaz-Aguado, 2005; Orue & Calvete, 2012). They come from families who permit dominion and violent behaviour (Sullivan et al., 2004), and also encourage their use (Ohene, Ireland, McNeely, Wagman, & Borowsky, 2006). Bullies are perceived by their peers as intolerant and arrogant, and at the same time as seeing themselves as failures (Díaz-Aguado, Martínez, & Martín, 2004). These characteristics reflect a strong orientation in bullies towards dominating others, thus achieving the power and protagonism they find it difficult to obtain by other means.

A third group has been found, which is victim and bully at the same time, which has the greatest number of risk factors, as well as the strongest relationships with these factors. They share the following characteristics with bullies: disruption, externalization, low academic achievement, and aggressive behaviour (Cook et al., 2010; Unnever, 2005), but this behaviour does not permit them to achieve power. The origin of their aggression is basically reactive, in contrast to that of bullies, whose acts of violence are more instrumental (Schwartz, Proctor, & Chien, 2001). Bully-victims tends to be specially characterized by their unpopularity, impulsiveness and low social competence (Cook et al., 2010).

The findings on the relationship between peer violence and problems with teachers point out that students who do not identify with academic work are more at risk of presenting violent behaviour at school (Osborne, 2004), including bullying of peers, a risk that decreases with the perception of adequate support from teachers (Natvig, Albraktsen, & Qvarstrom, 2001) and increases with the perception of being treated unjustly by teachers (Estévez, Murgui, Moreno, & Musitu, 2007). It has also been observed that bullies and bully-victims present more problems of disruptive behaviour than their schoolmates (Kokkinos & Panayiotou, 2004). It is not clear, however, whether their disruptive behaviour in the classroom is of a reactive nature, due to their difficulties of self-control, or a proactive and instrumental one, with the purpose of demonstrating their power in relation to the teacher.

As indicator of the disruptive behaviour spread, it has to be considered that 21% of teachers of Secondary Compulsory Education in Spain acknowledge suffering it frequently or very frequently (Díaz-Aguado et al., 2010). Research carried out on disruptive behaviour reveals that teachers direct more criticism and fewer positive comments to those who present it, and such attitudes by teachers tend to reduce students' motivation to learn and their level of academic achievement (Wentzel, 2002). Students themselves tend to attribute their own disruptive behaviour to a lack of support and acknowledgement from teachers (Bru, Stephens, & Tosheim, 2002). A disruptive interaction between teacher and student can sometimes trigger a chain of actions and reactions that spirals out of control, leading to coercion, chaos, and damage (Allen, 2010). Despite this, it is surprising how little research has been done on the interaction between teachers and student participants in bullying (Cook et al., 2010). The main objective of this study is to determine the relationship between direct involvement in bullying, as measured by the frequency with which students admit have experienced specific situations of abuse with other students, and the frequency with which they report expressing disruptive or hostile behaviour towards teachers, and receiving discriminatory or hostile treatment by teachers. To address this goal, we first established a typology of students with relation to the frequency and type of bullying behaviours. Subsequently, this typology will be related to the behaviours directed towards teachers and to the students' perception of the treatment they receive from the teachers

as well as the perception of norms and conflict resolution in school. As a secondary goal, we will explore the relationships between the types of bullying behaviours and other variables of individuals, such as the justification of violence and the advice received from significant adults about the use of violent behaviours.

## Method

### Participants

The study included 22114 Spanish adolescents, aged from 12 to 18 years (mean age= 14.22, *SD*= 1.41). 49.6% were boys (mean age= 14.26, *SD*= 1.41) and 50.4% were girls (mean age= 14.20, *SD*= 1.40). Participants were enrolled in 302 schools for Secondary Compulsory Education. The mean number of students per school was 77, ranging from 12 to 147 and with a median of 79 students. 57.1 % (12627) of participants studied in public schools and 42.9% (9487) in private schools (both private financed by the state and private). Of the participants, 25.2 % were from first grade, 24.7 from second grade, 25.7 from third grade, and 24.4 from fourth grade. Of them, 91% reported they were native born.

### Design

The design was a sample survey with stratified cluster sampling. The primary sampling unit was the school and random selection of one or more classrooms, depending on the centre size. The sample framework was the list of schools in the 17 Spanish regions supplied by the educational authorities. The sampling design was stratified by region (17) and type of centre (3: public, private financed by the state, and private) with sizes proportional to the population sizes. In order to establish the effective sample size, controlling the possible effects of the variance between centres, an intra-class correlation of 0.10 was considered. In practice, the school effect measured by intra-class correlation on the main variables, quantitative variables formed by adding items for different types of victimization and aggression, was in the range from .014 (victim of cyber-bullying) to .030 (bullying as exclusion). Due to these small effects, the design effect was not corrected in the statistical analysis, and we did not consider the possibility of carrying out multilevel analysis.

### Procedure

The principals of the selected schools were notified and asked for their participation in the study. Informed consent from the parents of the selected students was requested. Data collection was carried out via Internet in the schools. Students were instructed that the survey was voluntary, they could withdraw at any time, and that their responses were anonymous. A responsible teacher remained in the room during the survey administration to answer questions and potential problems associated with the computers. The time required to complete the questionnaire was around 50 minutes.

### Instruments

*Indicators of victimization and aggression.* A questionnaire composed of 32 items referred to different forms of victimization and aggression was used. The response format was a 4-point Likert-

type scale: 1 (Never), 2 (Sometimes: once or twice a month); 3 (Frequently: once a week); 4 (Many times: several times a week).

Exploratory factor analysis was carried out separately on items of victimization (16) and aggression (16). Results from analysis of victimization items showed three factors: Victim of exclusion (six items,  $\alpha = .86$ ), Victim of aggression and threats (six items,  $\alpha = .87$ ), and Cyber-victim (four items,  $\alpha = .83$ ). The results from aggression situations showed three factors: Exclusion and psychological aggression (five items,  $\alpha = .83$ ), Aggression as direct aggression or threats (seven items,  $\alpha = .91$ ), and Aggression as cyber-bullying (four items,  $\alpha = .91$ ). The summative scores from the six factors were converted to the original scale from 1 to 4 dividing by the number of items. These factor scores were used in the latent class analysis for the formation of types of students.

The following covariates measures were derived from exploratory factor analysis (principal axis factoring) and come from a previous study (Díaz-Aguado et al., 2010) where the technical aspects of the psychometric properties of the measures are available. Factor scores were obtained by summing the scores on the items and dividing by the number of items to keep the scores in the original scale (1-4). Before computing the factor scores, the missing values of the items were imputed with the IBM, SPSS v.19 software, using the EM algorithm.

*Messages received from the adults encouraging violence.* This variable is composed of three items that reflect messages ("If someone hits you, hit her/him") that encourage violence and dominance ( $\alpha = .86$ ).

*Justification of violence and aggression.* The scale is composed of 11 items ( $\alpha = .83$ ) that show an inclination to reactive and proactive violence ("If you do not return the blows you receive, others will think you're a coward").

*Disruptive behaviours exhibited by the student in the classroom.* This variable includes six items ( $\alpha = .88$ ) associated with disrespect to teacher and disturbing the order of the classroom ("Annoying the teacher; hindering the teaching").

*Aggressive behaviours targeting the teacher.* A variable consisting of four items referred to aggressive and threatening behaviours directed at the teacher ( $\alpha = .89$ ) ("Breaking or stealing her/his possessions").

*Teacher's unfair treatment as perceived by the student.* The factor is composed of eight items ( $\alpha = .88$ ) that reveal teacher's behaviour characterized by exclusion, rejection, and crazing ("Teachers reject me").

*Teacher's aggressive behaviour as perceived by the student.* The variable is composed of three items ( $\alpha = .75$ ) that reveal teacher's behaviour characterized by aggressions and threats ("Teachers threaten me to scare me").

*School rules and conflict resolution perceived as appropriate.* The variable is composed of 7 items ( $\alpha = .78$ ) ("When a conflict arises, we try to solve it without hitting or insulting anyone").

#### Data analysis

We first conducted some preliminary descriptive analyses and we explored gender differences in the six bullying indicators, as well as descriptive analysis of the seven quantitative covariates. Significance of differences by gender was carried out by the Mann-Whitney U nonparametric contrast because of the non-normality of the variables. The effect size was computed by the Rosenthal's  $r$  statistics (Rosenthal, 1991) with values ranging from 0 to 1.

Spearman correlations were computed among the scores of the indicators of bullying behaviours and the scores of the covariates.

Data preparation and imputation of missing data, as well as the descriptive analyses, difference contrasts, and Spearman correlation were carried out with the IBM SPSS v.19 software. The procedure used for latent class analysis (LCA) was the "Cluster Model" with the program Latent Gold 4.5 (Vermunt & Magidson, 2005). LCA is a statistical approach that classifies individuals into groups based on their patterns of responses to sets of observed variables (Hagenaars & McCutcheon, 2002). The groups are represented by a categorical latent variable. The determination of the optimal number of classes or clusters is necessary. This requires the specification and testing of multiple solutions (1-class, 2-class, 3-class, etc.). From these successive models, the designation of the best-fitting model was determined by the Bayesian information criteria (BIC; Schwarz, 1978). The BIC index adjusts the likelihood ratio statistics for the number of model parameters. Lower values suggest more parsimonious and well-fitting models. In order to compare successive models, the bootstrapped likelihood ratio test (McLachlan & Peel, 2000) was used. Other indicators used were the classifications errors and the entropy R-squared index with values near to 1 indicating a good fit. This study used multiple continuous variable indicators of victim and aggressor behaviours. Sometimes, the term LCA is reserved for categorical indicators using the term latent profile analysis for continuous indicators, however, LCA can also be used for analysis as a general term, and we used LCA in this last meaning.

The last purpose was to answer questions related to the relationships between group membership and several covariates specified in the hypotheses. As usual when using LCA, we proceeded to use the following three steps: (a) an LC model is built for the set of the six indicators, (b) subjects are assigned to latent classes based on modal membership, and (c) the association between the assigned class membership and external variables (covariates) is investigated using multinomial logistic regression. This last analysis was carried out with the program SPSS v.19, using the class membership as dependent variable.

## Results

### Descriptive statistics and gender differences

Prior to the specification of the latent class models, we computed the descriptive statistics for the indicators of bullying situations and the contrasts for gender differences, the descriptive statistics for the covariates, and the Spearman correlations among the indicators of bullying situations and covariates. Table 1 shows descriptive statistics, Spearman correlations, and contrasts results. As usual, the Mann-Whitney  $U$  showed statistically significant differences related to gender in all indicators of victimization and aggression. Boys showed higher mean scores than girls in all variables. However, the effect sizes computed by Rosenthal's  $r$  (Rosenthal, 1991) were very small, as we can see in Table 1.

### Latent class analysis

Table 2 shows the fit statistics corresponding to the sequence of models tested. In all specifications, the best log-likelihood values were replicated several times using different random starting values, suggesting that local maxima were not a problem. The BIC

Table 1

Descriptive statistics of bullying indicators and covariates. Results of gender differences contrasts, and Spearman correlations among bullying indicators and covariates

Descriptive statistics and contrasts					Spearman correlations with covariates & descriptive statistics of covariates						
Indicators	Gender	M	SD	Z U-MW p-value r	1	2	3	4	5	6	7
Victim of exclusion	M	1.27	.47	-1.39ns	.03**	.07**	.14**	.13**	.25**	.21**	-.13**
	F	1.23	.40	.20							
	T	1.25	.44	.009							
Victim of aggression	M	1.10	.32	-15.66	.04**	.07**	.11**	.19**	.18**	.24**	-.09**
	F	1.04	.18	.000							
	T	1.07	.26	.105							
Cyber-bullying victim	M	1.06	.25	-2.38	.05**	.10**	.14**	.20**	.17**	.20**	-.11**
	F	1.03	.15	.02							
	T	1.05	.20	.016							
Aggressor by exclusion	M	1.28	.45	-5.34	.16**	.31**	.42**	.22**	.36**	.23**	-.22**
	F	1.23	.36	.000							
	T	1.26	.41	.035							
Direct aggressor	M	1.09	.30	-23.75	.18**	.25**	.31**	.35**	.25**	.27**	-.17**
	F	1.03	.15	.000							
	T	1.06	.24	.16							
Cyber-bullying aggressor	M	1.06	.30	-13.71	.10**	.15**	.24**	.37**	.18**	.26**	-.11**
	F	1.02	.15	.000							
	T	1.04	.24	.09							
Mean					1.87	1.65	1.22	1.06	1.33	1.13	2.48
Standard deviation					.87	.51	.41	.29	.46	.37	.58

Note: \*\* p<.01 two tailed. Z U-MW: Mann-Whitney U, Z statistic. 1: Messages encouraging violence. 2: Justification of violence. 3: Disruptive behaviours exhibited by the student in the classroom. 4: Aggressive behaviours targeted to teacher. 5: Teacher unfair treatment as perceived by the student. 6: Teacher aggressive behaviour as perceived by the student. 7: School norms and conflict resolution perceived as appropriate

Table 2

Summary of iterative LCA process with the scores of victimization and aggression

Model	LL	Number of parameters	BIC(LL)	Classification errors	Entropy R-squared
1-cluster	22704.20	12	45528.44	.000	1.00
2-cluster	247217.26	25	-494184.93	.002	.99
3-cluster	380360.30	38	-760340.45	.002	.99
4-cluster	403323.33	51	-806136.86	.003	.98
5-cluster	418586.45	64	-836532.64	.004	.98
6-cluster	430563.64	77	-860356.97	.011	.99

progressively shrank with the addition of classes and parameters up to six classes. The five-class model was ultimately selected due to the fact that it had a low observed BIC value relative to the other specifications. The bootstrapped likelihood ratio test did not allow rejection of the five-class model in favour of the six-class specification ( $p>.05$ ). The percentage of the classification errors was very low and less than for the six-class model. The entropy R-squared was very high, indicating the security of the classification.

Figure 1 shows the profile in terms of mean response for the six indicators and a description of the five-class model is presented in Table 3.

Members of the first class (73.1%) had means close to 1 on all indicators, and based on this response pattern, this class was termed the non-participant class. Members of the second class (13.1%) had means higher than those of Class 1 in the items related to exclusion and psychological aggression, but lower than Class 4 and Class 5. Based on this profile, Class 2 was termed the followers of the bullies class. Members of the third class (7.1%) showed a profile with means relatively high on variables related to the victimization. We termed Class 3 the victims' class. Members of the fourth class (3.6%) showed the highest means in all indicators, both victimization and aggression and based on this profile, Class 4 was termed the victim-bully class. Finally, fifth class members (3.1%) showed high averages in the indicators of aggression, but not in those of victimization, and we termed Class 5 the bullies' class.

#### Covariates of Class Membership

Firstly, we computed Spearman correlations among victimization and aggression scores and scores obtained in the covariates. Table 1 shows these correlations. Due to the large sample size, most correlations were statistically significant, but some of them had very low values.

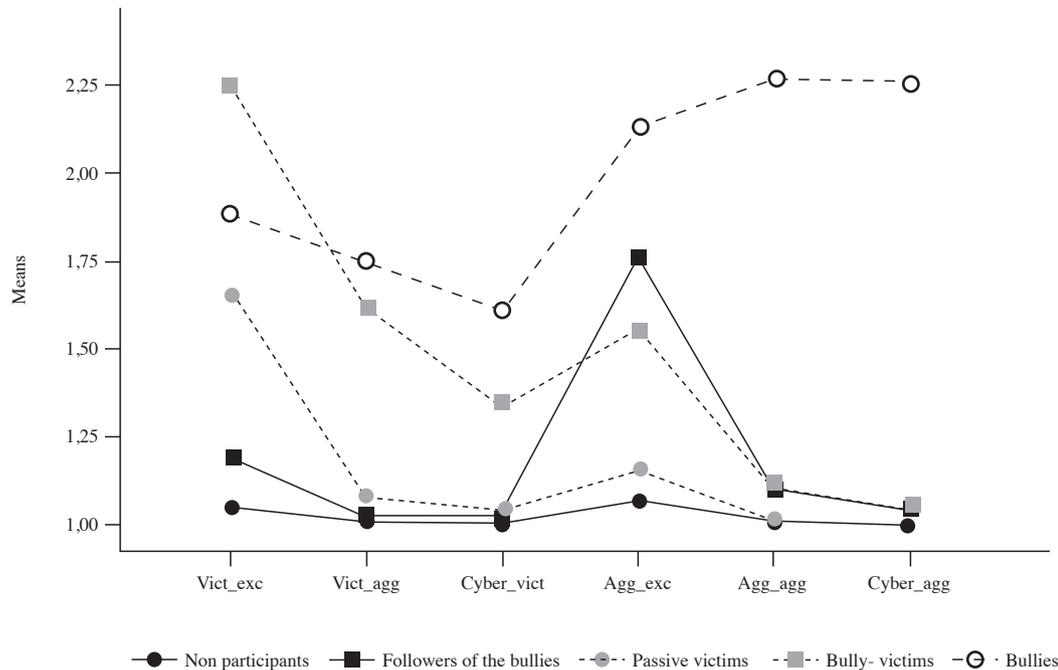


Figure 1. Profiles of the 5 classes in the scales of victimization and aggression

Note: Vict\_exc= Victim of exclusion; Vict\_agg= Victim of direct aggression; Cyber\_vict= Cyber-victim; Agg\_exc= Aggressor by exclusion; Agg\_agg= Aggressor by direct aggression; Cyber\_agg= Cyber-aggressor

Table 3  
Means and standard deviation of indicators and latent class membership (N= 22114)

Latent-class characteristics	Non-participants 73.1% (n= 16165)		Followers of the bullies 13.1% (n= 2897)		Passive victims 7.1% (n= 1570)		Bully-victims (Victims-Bullies) 3.6% (n= 796)		Bullies 3.1% (n= 686)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Victim of exclusion	1.13	.23	1.37	.40	1.86	.78	2.11	.81	1.21	.27
Victim of aggression	1.00	.00	1.12	.14	1.29	.42	1.90	.68	1.07	.00
Cyber-Victim	1.00	.00	1.00	.00	1.28	.27	1.68	.68	1.09	.14
Aggressor by exclusion	1.16	.25	1.51	.52	1.24	.31	1.96	.75	1.81	.65
Direct aggressor	1.00	.00	1.12	.14	1.00	.00	1.78	.78	1.47	.50
Cyber-aggressor	1.00	.00	1.00	.00	1.00	.00	1.76	.85	1.43	.45

Latent class membership was regressed on the covariates of interest using multinomial logistic regression. The results are presented in Table 4. The reference class was that of the non-participant class. The odds ratios indicated the predicted change in the odds of membership in a particular class compared to the non-violent class for a one-unit increase in the covariate, holding constant all other variables in the model. Alpha for significance was set at .05.

First, predictors of membership in the followers of the aggressor class compared to the non-participant class were considered. An increase of one standard deviation in the perception of the school norms and conflict resolution perceived as appropriate significantly decreased the odds of membership in the followers of the aggressor class by 13%. On the contrary, increases of one standard deviation in the rest of significant covariates increased the odds of membership: messages encouraging violence increased by 10%, justification of violence by 23%, disruptive behaviours

by 37%, perceived unfair treatment by the teacher by 18%, and perceived aggressive behaviour by the teacher by 7%. Being male increased the probability of membership by 89% compared with the non-participant class. Next, predictors of membership in the victim class were considered. An increase of one standard deviation in the perception of school norms and conflict resolution perceived as appropriate significantly decreased the odds of membership in this class by 20%, and messages encouraging violence by 7%. On the contrary, increases of one standard deviation in the rest of significant covariates increased the odds of membership: teacher's behaviour perceived as unfair increased by 30%, and teacher's behaviour perceived as aggressive and threatening by 20%.

Then, predictors of membership in the victim-bully class compared to non-participant class were considered. Increase of one standard deviation in justification of violence, disruptive behaviour, aggressive behaviour towards the teacher, and perceived

aggressive and threatening behaviour by teacher, increased the odds of membership in the victim-bully class, by 38%, 31%, 44%, and 54%, respectively. On the contrary, increase of one standard deviation in perception of school norms and conflict resolution perceived as appropriate decreased the odds of membership by 32%. Being male increased the probability of membership by 210% compared with the non-participant class.

Finally, predictors of membership in the bully class compared to the non-participant class were considered. Increase of one standard deviation in messages encouraging violence, justification of violence, disruptive behaviour, aggressive behaviour towards the teacher, and perceived aggressive and threatening behaviour by teacher, increased the odds of membership in the victim-bully class by 13%, 55%, 58%, 20%, and 21%, respectively. On the contrary, increase of one standard deviation in perception of school norms and conflict resolution perceived as appropriate decreased the odds of membership by 26%. Being male increased the probability of membership by 61% compared with the non-participant class.

### Discussion

The latent class analysis on school peer bullying carried out in the present work, including cyber-bullying, has revealed the following groups:

- 1) Not involved, who do not participate (73.1%).
- 2) Followers of bullies (12.9%), who participate basically in exclusion and psychological bullying but less than bullies.
- 3) Passive victims of exclusion or psychological bullying (7.3%). Despite other studies (Unnever, 2005), these victims barely suffer from the most severe types of violence (physical aggression, coercions, threats).

- 4) Victim-bullies (3.6%), who perceive to have suffered exclusion and rejection more than any other group and who respond with similar behaviours but less frequently and also suffer but who do not exert direct aggressions and cyber-bullying.
- 5) Bullies, (3.1%), those who participate in the most severe forms of aggression and cyber-bullying. They also perceive to suffer from exclusion and rejection, as well as some direct aggressions and cyber-bullying, but less so than those they commit. Those results show that school bullying extends through cyber-bullying (Smith et al., 2008).

Percentages of class membership are not bullying prevalence estimates; these should be computed by other procedures (Solberg & Olweus, 2003) and they lead to lower percentages of participation (Díaz-Aguado et al., 2010).

In contrast to the findings of previous studies (Juvonen, Graham, & Schuster, 2003; Unnever, 2005), in our study there is not a specific group of pure bullies without victimization, perhaps related to the bullies' wish, identified here, to justify the bullying they exert through the real or supposed exclusion they receive. This may be related to the increment of social rejection and current policies against peer violence in Spain.

Passive victims place lower value on the school norms and the way conflict is resolved, and they also perceive a more discriminatory and hostile treatment from teachers, consistent with the findings obtained by Bru et al. (2002). Unlike other studies (Ohene et al., 2006), we detected here that passive victims have heard less advice on behalf of violence.

Our findings reveal the relation between justifying violence and using it (Díaz-Aguado, 2005), because those who commit bullying justify violence more than those who are not involved, especially the bullies' group, which uses more severe behaviours and more frequently.

Table 4  
Covariates of class membership. Results from multinomial logistic regression (n= 22114)

	Followers of the bullies		Passive victims		Bully victims		Bullies	
	B	OR(95%CI)	B	OR (95%CI)	B	OR (95%CI)	B	OR (95%CI)
Gender (Male)	.64 ***	1.89 (1.73-2.06)	-.08 ns	.92 (.83-1.03)	.74***	2.1 (1.75-2.52)	.48***	1.61 (1.36-1.52)
Messages encouraging violence	.09***	1.1 (1.05-1.14)	-.07*	.93 (.88-.99)	-.05 ns	.95 (.87-1.04)	.13**	1.13 (1.05-1.23)
Justification of violence	.21***	1.23 (1.17-1.39)	.03 ns	1.03 (.97-1.1)	.32***	1.38 (1.27-1.50)	.44***	1.55 (1.43-1.68)
Disruptive behaviour	.37***	1.37 (1.30-1.45)	-.07 ns	.93 (.86-1.02)	.27***	1.31 (1.20-1.42)	.46***	1.58 (1.46-1.70)
Aggressive behaviour towards the teacher	-.02 ns	.98 (.93-1.05)	.08 ns	1.09 (.98-1.19)	.36***	1.44 (1.34-1.54)	.18***	1.20 (1.18-1.23)
Teacher unfair treatment perceived by the student	.16***	1.18 (1.11-1.25)	.26***	1.3 (1.20-1.40)	.08 ns	1.08 (.98-1.19)	.07 ns	1.07 (.97-1.18)
Teacher aggressive behaviours perceived by the student	.07*	1.07 (1.01-1.14)	.18***	1.20 (1.11-1.29)	.43***	1.54 (1.43-1.67)	.19***	1.21 (1.12-1.29)
School norms and conflict resolution perceived as appropriate	-.14***	.87 (.83-.91)	-.23***	.80 (.75-.84)	-.39***	.68 (.62-.74)	-.30***	.74 (.68-.81)

Note: Non-participant class is the reference class. The covariates are quantitative and they were standardized, such as the unit is one standard deviation. Contrast of significance was carried out by Wald statistic; B= regression coefficient; OR= Odd Ratio.  
p<.05; \*\* p<.01; \*\*\* p<.001

In the case of bullies and followers, whose acts of violence are basically instrumental, justification of violence seems to come from messages encouraging violence from close adults, as already detected (Ohene et al., 2006). On the contrary, in victim-bullies, whose acts of violence are basically reactive, these acts seem to come from direct experience as victims, as noted by Schwartz et al. (2001).

The three groups that show bullying behaviour include mostly boys. They also commit and receive more problematic behaviours in their interaction with teachers than those not involved in bullying. Participation in the most severe escalations of disruption and coercion correspond to bullies, and most of all to victim-bullies, who show more disruptive (disturbance in class), and aggressive (insulting the teacher) behaviours, and perceive more hostility and lack of support from the teachers, as in the study of Reynard and Sonuga-Barke (2005). To explain this result, we could propose the hypothesis that these behaviours begin reactively, especially in the group of victim-bullies, and become exacerbated as they develop, becoming, especially in the group of bullies, instrumental behaviours aimed at demonstrating one's power to the other party.

Finally, these findings highlight the need to propose further study of school relationship problems—with a view to their prevention—from a comprehensive perspective that also covers disruption and coercion escalations between students and teachers, an aspect much less widely studied till now. It is to be expected that, on seeing their main concerns being addressed, this type of approach will help to overcome teachers' reluctance to participate in programmes for the prevention of relationship problems when such programmes focus only on peer bullying (Cowie, 2000).

We acknowledge a few limitations of the present article. The results rest on a set of subjective evaluations that are not easily accessible other than through self-reports. Future studies could be implemented based on other methods of assessment, such as peer and teacher nominations. On the other hand, as one of the reviewers pointed out, it would have been of interest to study of differential item functioning related to sex. This aspect of the scales of bullying will be addressed in future studies. Finally, the findings were obtained with a representative sample of Spanish adolescents and should be replicated in other countries with similar samples.

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