

Bullying/Cyberbullying in 5th and 6th grade: differences between public and private schools

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Título: Bullying/Cyberbullying en quinto y sexto curso de primaria: diferencias entre centros públicos y privados.

Resumen: Este estudio tuvo como objetivos estudiar la prevalencia de bullying/cyberbullying y explorar la cantidad de conducta sufrida, realizada y observada de bullying/cyberbullying en centros públicos y privados. Con un diseño descriptivo de corte transversal, se administró el test "Cyberbullying: Screening de acoso entre iguales" a 1993 participantes del País Vasco de 5º y 6º curso, 49% en centros públicos y 51% en privados. Los resultados pusieron de relieve que: (1) No hubo diferencias entre centros públicos y privados en el porcentaje de víctimas-puras, agresores-puros, víctimas-agresivas y observadores ni en bullying ni cyberbullying; (2) Aunque, al analizar todas las víctimas o agresores (no solo los puros), el porcentaje de estudiantes que sufrió agresiones físicas, verbales, sociales y psicológicas, que agredió física y verbalmente, y que observó agresiones físicas, verbales y psicológicas fue significativamente mayor en los centros públicos; (3) En los centros públicos las cibervíctimas sufrieron significativamente más cuatro conductas de cyberbullying, y los ciberobservadores observaron significativamente más una de las 15 conductas de cyberbullying; y (4) La cantidad de conducta sufrida de bullying/cyberbullying y la cantidad de conducta observada cara-a-cara fue mayor en centros públicos. Estos resultados revelan que el tipo de centro puede ser un factor relevante.

Palabras clave: Bullying; cyberbullying; público-privado; nivel socioeconómico.

Abstract: The study aimed to analyse the prevalence of bullying/cyberbullying and to study the level of bullying/cyberbullying suffered, perpetrated and observed in public and private schools. Using a descriptive cross-sectional design, the test "Cyberbullying: Screening of peer harassment" was administered to a sample of 1,993 pupils from the Basque Country attending 5th and 6th grade of elementary school, 49% in public and 51% in private schools. The results revealed that: (1) There were no statistical differences between public or private schools in the percentage of pure-victims, pure-aggressors, bully-victims and observers either in bullying or in cyberbullying; (2) Nevertheless, when analyzing victims or perpetrators in general (not just pure-victims/pure-aggressors), the percentage of students who had suffered physical, verbal, social and psychological abuse; who had physically and verbally assaulted others; and who had observed physical, verbal and psychological aggression was significantly higher in public schools; (3) In public schools, cybervictims suffered significantly more of four out of fifteen cyberbullying behaviours, and cyberobservers also witnessed one behaviour significantly more; (4) The level of abuse suffered in bullying/cyberbullying was significantly higher in public schools, as well as the level of aggressive behaviours observed in face-to-face aggressions. These results reveal that the type of school can be a relevant factor.

Key words: Bullying; cyberbullying; public-school; private-school; socioeconomic status.

Introduction

Ever since the pioneer studies of Olweus in 1970, research has shown that bullying or peer harassment at school is a global phenomenon that affects children and adolescents worldwide. Although research has paid more attention to individual variables (Postigo, González, Montoya & Ordoñez, 2013), some studies have shown interest in an ecological variable such as the context in which this phenomenon occurs: the school. Bullying is defined as aggression characterized by the intention to harm, its repetition, and the power imbalance between victim and aggressor (Olweus, 2013). Nevertheless, with onset of cyberbullying or harassment by means of information communication technologies (ICT), the definition has changed, and new ways of harming and harassing have appeared. One of the definitions most frequently used to describe cyberbullying is that proposed by Tokunaga: "Cyberbullying is any behaviour carried out by individuals or groups by digital or electronic means to communicate hostile or aggressive messages with the intention of harming or annoying others" (Tokunaga, 2010). Nevertheless, the definition of this phenomenon is still currently under debate.

Despite different researchers' nuances in the definition, both phenomena have been shown to have high prevalence. Recent reviews of the epidemiological studies report rates between 10 and 33% of victims and between 5 and 13% of aggressors in the case of face-to-face bullying (Hymel & Swearer, 2015); and rates between 3.2 and 33% of cybervictims and between 1 and 29.7% of cyberaggressors in the case of cyberbullying (Garaigordobil, 2015). This variability, so large in numbers, is due to cultural and linguistic differences, the study of different types of aggression, and the use of different assessment instruments and data analysis tools, a barrier that the research of these two phenomena should overcome (Postigo et al., 2013).

The studies that have analyzed differences in bullying and cyberbullying as a function of the school network—that is, public or private/subsidized schools—have not found consistent results. Whereas some studies have found no differences in bullying between students of public and private schools (Garaigordobil, Martínez-Valderrey, Páez & Cardozo, 2015; García-Contente, Pérez & Nebot, 2010; Khamis, 2015), other studies have concluded that, in the few cases where differences were found, such as social or verbal exclusion, they were more frequent in private schools (Defensor del Pueblo, 2007; León, Felipe, Gómez & López, 2011). In contrast to these, the ISEI-IVEI (2012) report found a higher percentage of victims in public schools in the same direction as other international studies (Shujja, Att & Shujjat, 2014; Topçu, Erdur-Baker & Çapa-Aydın, 2008). However, the study of Piñero-Ruiz, Arene, López-Espín

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and Torres-Cantero (2014) found no differences in victimization between students of public and private schools but it did find higher rates of aggressiveness in public schools in three out of eleven presentational behaviours performed (slapping, fighting due to anger, hitting back at someone), and the opposite in a behaviour of verbal aggression (making fun of another person), which was more frequent in subsidized schools. With regard to cyberbullying, the literature is not unanimous. Thus, whereas Mark and Ratliffe (2011) found significant differences in the number of events reported by cybervictims—higher in private schools—, Garaigordobil et al. (2015) found no differences in the percentage of cybervictims, cyberaggressors, or bully-cybervictims, but they did find differences in the percentage of cyberobservers, with a higher number of observers in private schools.

Other studies have addressed the differences between the two phenomena from a factor closely linked to the students' attending public or private schools, such as the socioeconomic level (SEL). Thus, various studies have indicated the relation between lower SEL and higher probability of being a victim of face-to-face bullying (Due et al., 2009; Fu, Land & Lamb, 2013; Jansen, Veenstra, Ormel, Verhulst & Reijneveld, 2011). Others have noted that adolescents who were victims in primary and secondary school (chronic) had a lower SEL than the aggressors, the bully-victims, or the uninvolved (Alikasifoglu, Erginoz, Ercan, Uysal & Albayrak-Kaymak, 2007; Bowes et al., 2013). The study of Fu et al. (2013) found that adolescents from families with lower SEL were more frequently victims of severe bullying behaviours but the relation was reversed in the case of less severe behaviours. However, other investigations have not found any relation between SEL and being a victim of face-to-face bullying (Barboza et al., 2009; Fernández-Tomé, 2015; García-Continente et al., 2010; Magklara et al., 2012).

It has also been found that lower levels of SEL were related to being a bully-victim or an aggressor (Jansen et al., 2011). Jansen et al. (2012) found that various indicators of SEL were related to roles of bully-victim and aggressor (lone-parenthood, parental unemployment, low parental age, lower educational level). In a similar vein, Magklara et al. (2012) related aggression and bully-victimization to low levels of SEL. Specifically, paternal unemployment was more frequent in aggressors and, in the case of bully-victims, the mothers were less likely to have paid jobs. In contrast, Shujja et al. (2014) found more bullying behaviours perpetrated by adolescents of high SEL.

Regarding the relation between SEL and cyberbullying, there are also some discrepancies. Thus, whereas some studies consider high SEL as a protective factor, with fewer cybervictims and cyberaggressors (Låftman, Modin & Östberg, 2013), others find no differences, or else they find similar prevalences of cybervictims and cyberaggressors with low and medium SEL levels (Garaigordobil, Aliri, Maganto, Bernarás & Jaureguizar, 2014; Moore, Huebner & Hills, 2012).

Goals and hypotheses

Taking into account the low unanimity of the studies with regard to these factors, this research proposes two goals: (1) to analyze the prevalence of bullying and cyberbullying in public and private schools, and (2) to explore the quantity of bullying and cyberbullying behaviour suffered, perpetrated, and observed in both types of schools in a representative sample of students from the last cycle of Elementary School of the Basque Country. For this purpose, two hypotheses were formulated: (1) There would be no significant differences between public and private schools in the percentage of pure victims, pure aggressors, bully-victims and observers of bullying and cyberbullying, or in the prevalence of the different types of bullying and cyberbullying behaviours evaluated; and (2) The quantity of bullying and cyberbullying behaviours suffered, perpetrated and observed would be similar in public and private schools.

Method

Participants

Participants in this study were 1993 students from 5th and 6th grade of Elementary School, who comprised a randomly selected and representative sample of the last cycle of Elementary School of the Basque Country. Participants were aged between 9 and 13 years ($M = 10.68$, $SD = 0.71$), 50.2% boys and 48.8% girls. Of the sample, 51% attended schools of the public network (13 schools) and the remaining 49% attended private/subsidized schools (12 schools).

Instrument

To analyze bullying and cyberbullying, the standardized instrument with psychometric guarantees of reliability and validity, Cyberbullying: Screening of Peer Harassment (Garaigordobil, 2013) was used. This scale assesses both face-to-face bullying and cyberbullying (see Annex). The two scales (Bullying and Cyberbullying) provide four indicators: level of victimization, aggression, bully-victimization, and observation, respectively. The Bullying Scale, made up of 12 items, assesses four types of bullying: Physical (aggressive actions aimed at a person's body, or indirect actions, aimed at their property); Verbal (negative verbal behaviours towards someone); Social (behaviours that isolate a person from the group); and Psychological (bullying behaviours to undermine a person's self-esteem and provoke insecurity and fear). The items are grouped according to the role played by the person being evaluated in the aggression situation: victim, aggressor or observer. The Cyberbullying Scale explores the roles of cybervictim, cyberaggressor and cyberobserver in 15 behaviours (45 items) related to technological bullying such as: sending offensive and insulting messages, making offensive calls, recording a beating and uploading it to YouTube, disseminating compromising photos

or videos, stealing and disseminating photos, making anonymous to calls to frighten, blackmail, or threaten someone, sexual harassment, spreading rumours, secrets, and lies, stealing email passwords, faking photos or videos and uploading them to YouTube, isolating others from social networks, blackmailing with disclosing intimate details about someone, death threats, slandering.

On the two scales, participants report the frequency with which they have suffered, performed or seen others perform the behaviours, and whether they have heard that they had happened to someone they knew during the past year (Likert scale: 0 = Never, 1 = Sometimes, 2 = Quite a few times, 3 = Always). Using Cronbach's alpha, the psychometric studies confirmed the adequate internal consistency both of the Bullying Scale (global scale $\alpha = .81$, victimization factor $\alpha = .70$, aggression factor $\alpha = .71$, and observation factor $\alpha = .80$) and of the Cyberbullying Scale (global scale $\alpha = .91$, cybervictimization $\alpha = .82$, cyberaggression $\alpha = .91$, cyberobservation $\alpha = .87$). Factor analysis confirmed a three-factor structure (victims, aggressors and observers) for both scales, which explains, respectively, 57.89 and 40.15% of the variance. Studies of convergent validity yielded positive correlations between aggression and aggressive conflict resolution, antisocial behaviour, psychopathological disorders, academic problems, neuroticism... and negative correlations with empathy, emotion regulation, responsibility, and social adjustment.

Design and Procedure

This investigation used a descriptive and comparative cross-sectional design. With regard to the procedure, firstly, an e-mail was sent to the randomly selected schools, explaining the research. The schools that agreed to participate received the informed consent forms for fathers/mothers and participants, and a date was scheduled to complete the Cyberbullying Scale. The test was administered for 45 minutes by members of the research team. The evaluator presented the standardized instructions and handed out the questionnaire to the participants, who completed the test in the classroom in a group. The study respected the ethical values required in research with humans (informed consent and the right to the information, protection of personal data and guarantees of confidentiality, non-discrimination, and the possibility to leave the study at any phase), and received the favourable report of the Research and Teaching Ethics Committee of the University of the Basque Country (CEISH/229/2013).

Data analysis

Firstly, the frequencies and percentages of participants who were pure-victims, pure-aggressors, bully-victims, and observers of one or more bullying and cyberbullying behaviours in the past year were calculated, obtaining Pearson's chi-square to compare public and private schools. Complementarily, we explored the differences in the diverse types of aggressive behaviours reported by victims, aggressors and observers of bullying and cyberbullying as a function of the type of school. In this analysis, all the victims (not just the pure-victims) and all the aggressors (not just the pure-aggressors) were taken into account. Secondly, we conducted univariate analyses of variance (ANOVA) on the scores obtained in the indicators of bullying and cyberbullying (victimization, aggression, bully-victimization and observation) to determine possible differences in the amount of these behaviours suffered, performed and observed in each type of school.

Results

Bullying: prevalence and indicators

In face-to-face bullying, the contingency and Pearson chi-square analyses (see Table 1) confirmed the absence of significant differences in any of the roles as a function of the school network, that is, the prevalence of pure-victims, pure-aggressors, bully-victims and observers was similar in public and private schools.

Table 1. Frequencies and percentages of pure-victims, pure-aggressors, bully-victims, and observers of bullying in public and private schools.

	Public		Private		χ^2 (1)	<i>p</i>
	<i>f</i>	%	<i>f</i>	%		
Pure-victim (<i>n</i> = 404)	211	20.7	193	19.8	0.29	.589
Pure-aggressor (<i>n</i> = 121)	68	6.7	53	5.4	1.38	.240
Bully-victim (<i>n</i> = 476)	250	24.6	226	23.2	0.56	.455
Observer (<i>n</i> = 1441)	738	72.6	703	72.0	0.07	.789

Note. *f* = frequency, % = percentage, χ^2 = Chi square, *p* = significance.

However, when analyzing all the victims and aggressors (not just pure-victims or pure-aggressors), the percentage of participants in both kinds of schools who had suffered, perpetrated or observed different types of aggressive face-to-face behaviours (Table 2) was significantly different. The percentage of students who had suffered physical, verbal, social, and psychological aggression, who had attacked others physically and verbally, and who had observed physical, verbal and psychological aggression was significantly higher in the public schools.

Table 2. Frequencies and percentages of participants who have suffered, performed, and observed different types of face-to-face aggressive behaviour (physical, verbal, social, and psychological) in private and public schools.

	Never		Sometimes		Fairly often		Always		$\chi^2(3)$	<i>p</i>
	Public <i>f</i> (%)	Private <i>f</i> (%)	Public <i>f</i> (%)	Private <i>f</i> (%)	Public <i>f</i> (%)	Private <i>f</i> (%)	Public <i>f</i> (%)	Private <i>f</i> (%)		
Victims										
Physical	777 (76.7)	806 (82.6)	174 (17.1)	135 (13.8)	58 (5.7)	31 (3.2)	8 (0.8)	4 (0.4)	14.14	.003
Verbal	643 (63.2)	620 (63.5)	246 (24.2)	270 (27.7)	108 (10.6)	72(7.4)	20 (2.0)	14 (1.4)	8.95	.030
Social	807 (79.4)	816 (83.6)	135 (13.3)	119 (12.2)	64 (6.3)	35 (3.6)	11 (1.1)	6 (0.6)	10.18	.017
Psychological	850 (83.6)	847 (86.8)	105 (10.3)	99 (10.1)	50 (4.9)	22 (2.3)	12 (1.2)	8 (0.8)	11.03	.012
Aggressors										
Physical	880 (86.5)	870 (89.1)	120 (11.8)	100 (10.2)	17 (1.7)	5 (0.5)	0 (0.0)	1 (0.1)	8.58	.035
Verbal	770 (75.7)	747 (76.5)	217 (21.3)	217 (22.2)	22 (2.2)	12 (1.2)	8 (0.8)	0 (0.0)	10.45	.015
Social	914 (89.9)	889 (91.1)	92(9.0)	79 (8.1)	10 (1.0)	8 (0.8)	1 (0.1)	0 (0.0)	1.71	.634
Psychological	962 (94.6)	926 (94.9)	46 (4.5)	42 (4.3)	9 (0.9)	4 (0.4)	0 (0.0)	4 (0.4)	5.95	.114
Observers										
Physical	480 (47.2)	496 (50.8)	327 (32.2)	332 (34.0)	169 (16.6)	123 (12.6)	41 (4.0)	25 (2.6)	10.59	.014
Verbal	362 (35.6)	355 (36.4)	353 (34.7)	387 (39.7)	233 (22.9)	191 (19.6)	69 (6.8)	43 (4.4)	10.99	.012
Social	581 (57.1)	541 (55.4)	276 (27.1)	292 (29.9)	115 (11.3)	109 (11.2)	45 (4.4)	34 (3.5)	2.73	.436
Psychological	656 (64.5)	674 (69.1)	234 (23.0)	212 (21.7)	95 (9.3)	60 (6.1)	32 (3.1)	30 (3.1)	8.46	.037

Note. *f* = frequency, % = percentage, χ^2 = Chi square, *p* = significance.

When analyzing the amount of face-to-face aggressive behaviour suffered, performed, and observed, the ANOVA (Table 3) revealed that the amount of behaviour suffered and observed was significantly higher in public schools, although the effect size was very small.

Table 3. Means, standard deviations, analysis of variance, and effect size (Cohen's *d*) of the indicators of bullying in public and private schools.

	Public		Private		<i>F</i> (1, 1991)	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Victimization	1.35	2.95	1.06	1.72	10.99	.001	0.12
Aggression	0.61	1.17	0.52	1.02	2.89	.092	0.08
Bully-victimization	1.96	2.80	1.59	2.42	9.77	.002	0.14
Observation	2.93	2.81	2.65	2.66	4.97	.026	0.10

Note. *M* = mean, *SD* = standard deviation, *F* = Fisher's *F*, *p* = significance, *d* = Cohen's effect size.

Cyberbullying: prevalence and indicators

In cyberbullying, the contingency and Pearson chi-square analyses (see Table 4) confirmed the absence of significant differences in any of the roles as a function of type of school, that is, the prevalence of pure-cybervictims, pure-

cyberaggressors, bully-cybervictims and cyberobservers was similar in public and private schools.

Table 4. Frequencies and percentages of pure-cybervictims, pure-cyberaggressors, bully-cybervictims, and cyberobservers of cyberbullying in public and private schools.

	Public		Private		$\chi^2(1)$	<i>p</i>
	<i>f</i>	%	<i>f</i>	%		
Pure-cybervictim (<i>n</i> = 267)	140	13.8	127	13.0	0.24	.621
Pure-cyberaggressor (<i>n</i> = 13)	4	0.4	9	0.9	2.13	.144
Bully-cybervictim (<i>n</i> = 62)	39	3.8	23	2.4	3.64	.056
Cyberobserver (<i>n</i> = 753)	382	37.7	371	38.0	0.02	.876

Note. *f* = frequency, % = percentage, χ^2 = Chi square, *p* = significance.

Cybervictims from public schools suffered four behaviours significantly more: receiving offensive/insulting messages, offensive/insulting calls, frightening anonymous calls, and identity theft, whereas cyberobservers from public schools observed the following behaviours significantly more: attacking someone, recording the assault, and hanging it on the Internet. No differences were found in the remaining behaviours. No differences were found in the 15 behaviours carried out by cyberaggressors in public and private schools (see Table 5).

Table 5. Frequencies and percentages of cybervictims, cyberaggressors, and cyberobservers of different cyberbullying behaviours in public and private schools.

	Never		Sometimes		Fairly often		Always		$\chi^2(3)$	<i>p</i>
	Public <i>f</i> (%)	Private <i>f</i> (%)	Public <i>f</i> (%)	Private <i>f</i> (%)	Public <i>f</i> (%)	Private <i>f</i> (%)	Public <i>f</i> (%)	Private <i>f</i> (%)		
Cybervictims										
1	925 (91.0)	902 (92.4)	78 (7.7)	71 (7.3)	14 (1.4)	3 (0.3)	0 (0.0)	0 (0.0)	6.90	.032
2	981 (96.5)	960 (98.4)	29 (2.9)	15 (1.5)	7 (0.7)	1 (0.1)	0 (0.0)	0 (0.0)	8.34	.015
3	998 (98.1)	964 (98.8)	18 (1.8)	11 (1.1)	1 (0.1)	1 (0.1)	0 (0.0)	0 (0.0)	1.44	.488
4	1000 (98.3)	958 (98.2)	14 (1.4)	18 (1.8)	3 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	3.56	.169
5	1007 (99.0)	972 (99.6)	8 (0.8)	3 (0.3)	2 (0.2)	1 (0.1)	0 (0.0)	0 (0.0)	2.38	.304
6	952 (93.6)	931 (95.4)	53 (5.2)	40 (4.1)	12 (1.2)	2 (0.2)	0 (0.0)	3 (0.3)	11.36	.010
7	968 (95.2)	944 (96.7)	42 (4.1)	26 (2.7)	6 (0.6)	5 (0.5)	1 (0.1)	1 (0.1)	3.31	.346
8	999 (98.2)	964 (98.8)	16 (1.6)	8 (0.8)	2 (0.2)	4 (0.4)	0 (0.0)	0 (0.0)	3.11	.211
9	994 (97.7)	967 (99.1)	20 (2.0)	8 (0.8)	3 (0.3)	0 (0.0)	0 (0.0)	1 (0.1)	8.67	.034
10	976 (96.0)	945 (96.8)	32 (3.1)	30 (3.1)	7 (0.7)	1 (0.1)	2 (0.2)	2 (0.2)	6.22	.101
11	1007 (99.0)	972 (99.6)	9 (0.9)	4 (0.4)	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	2.70	.259
12	998 (98.1)	968 (99.2)	16 (1.6)	8 (0.8)	3 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	5.28	.071
13	1003 (98.6)	959 (98.3)	10 (1.0)	15 (1.5)	4 (0.4)	2 (0.2)	0 (0.0)	0 (0.0)	1.81	.404
14	993 (97.6)	958 (98.2)	19 (1.9)	15 (1.5)	4 (0.4)	2 (0.2)	1 (0.1)	1 (0.1)	0.92	.820
15	977 (96.1)	939 (96.2)	29 (2.9)	33 (3.4)	11 (1.1)	4 (0.4)	0 (0.0)	0 (0.0)	3.44	.179
Cyberaggressors										
1	990 (97.5)	956 (98.0)	25 (2.5)	18 (1.8)	0 (0.0)	2 (0.2)	0 (0.0)	0 (0.0)	2.97	.226
2	1007 (99.2)	968 (99.2)	7 (0.7)	7 (0.7)	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	2.01	.571
3	1009 (99.4)	973 (99.7)	5 (0.5)	3 (0.3)	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	1.39	.499
4	1013 (99.8)	973 (99.7)	2 (0.2)	2 (0.2)	0 (0.0)	1 (0.1)	0 (0.0)	0 (0.0)	1.04	.594
5	1012 (99.7)	973 (99.7)	2 (0.2)	2 (0.2)	1 (0.1)	1 (0.1)	0 (0.0)	0 (0.0)	0.00	.999
6	1006 (99.1)	967 (99.1)	9 (0.9)	9 (0.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0.01	.993
7	1006 (99.1)	967 (99.1)	9 (0.9)	8 (0.8)	0 (0.0)	1 (0.1)	0 (0.0)	0 (0.0)	1.07	.587
8	1012 (99.7)	972 (99.6)	1 (0.1)	3 (0.3)	1 (0.1)	1 (0.1)	1 (0.1)	0 (0.0)	2.04	.563
9	1012 (99.7)	973 (99.7)	2 (0.2)	3 (0.3)	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	1.20	.548
10	1008 (99.3)	973 (99.7)	7 (0.7)	2 (0.2)	0 (0.0)	1 (0.1)	0 (0.0)	0 (0.0)	3.63	.163
11	1013 (99.8)	974 (99.8)	1 (0.1)	1 (0.1)	1 (0.1)	0 (0.0)	0 (0.0)	1 (0.1)	2.02	.572
12	1014 (99.9)	973 (99.7)	1 (0.1)	2 (0.2)	0 (0.0)	1 (0.1)	0 (0.0)	0 (0.0)	1.14	.493
13	1012 (99.7)	974 (99.8)	3 (0.3)	1 (0.1)	0 (0.0)	1 (0.1)	0 (0.0)	0 (0.0)	1.96	.375
14	1014 (99.9)	973 (99.7)	0 (0.0)	3 (0.3)	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	4.08	.130
15	1013 (99.8)	973 (99.7)	1 (0.1)	3 (0.3)	1 (0.1)	3 (0.3)	1 (0.1)	0 (0.0)	2.04	.360
Cyberobservers										
1	813 (80.2)	774 (79.3)	164 (16.2)	173 (17.7)	33 (3.3)	26 (2.7)	4 (0.4)	3 (0.3)	1.45	.695
2	880 (86.8)	869 (89.0)	118 (11.6)	95 (9.7)	15 (1.5)	9 (0.9)	1 (0.1)	3 (0.3)	4.32	.228
3	922 (90.9)	896 (91.8)	70 (6.9)	72 (7.4)	15 (1.5)	8 (0.8)	7 (0.7)	0 (0.0)	8.08	.032
4	928 (91.5)	890 (91.2)	74 (7.3)	78 (8.0)	9 (0.9)	8 (0.8)	3 (0.3)	0 (0.0)	3.23	.357
5	939 (92.6)	926 (94.9)	66 (6.5)	47 (4.8)	5 (0.5)	3 (0.3)	4 (0.4)	0 (0.0)	7.06	.070
6	903 (89.1)	876 (89.8)	89 (8.8)	89 (9.1)	17 (1.7)	10 (1.0)	5 (0.5)	1 (0.1)	4.17	.244
7	902 (89.0)	890 (91.2)	100 (9.9)	72 (7.4)	7 (0.7)	11 (1.1)	5 (0.5)	3 (0.3)	5.30	.151
8	966 (95.3)	932 (95.5)	38 (3.7)	39 (4.0)	7 (0.7)	5 (0.5)	3 (0.3)	0 (0.0)	3.23	.357
9	961 (94.8)	928 (95.1)	47 (4.6)	44 (4.5)	5 (0.5)	4 (0.4)	1 (0.1)	0 (0.0)	1.06	.786
10	929 (91.6)	910 (93.2)	70 (6.9)	57 (5.8)	12 (1.2)	8 (0.8)	3 (0.3)	1 (0.1)	2.60	.457
11	945 (93.2)	916 (93.9)	57 (5.6)	56 (5.7)	7 (0.7)	4 (0.4)	5 (0.5)	0 (0.0)	5.55	.135
12	955 (94.2)	935 (95.8)	50 (4.9)	37 (3.8)	6 (0.6)	2 (0.2)	3 (0.3)	2 (0.2)	3.63	.304
13	947 (93.4)	924 (94.7)	55 (5.4)	45 (4.6)	8 (0.8)	5 (0.5)	4 (0.4)	2 (0.2)	1.97	.590
14	951 (93.8)	916 (93.9)	56 (5.5)	50 (5.1)	7 (0.7)	8 (0.8)	0 (0.0)	2 (0.2)	2.34	.505
15	929 (91.6)	892 (91.4)	71 (7.0)	70 (7.2)	10 (1.0)	10 (1.0)	4 (0.4)	4 (0.4)	0.03	.998

Note. 15 cyberbullying behaviours: 1 = Offensive/insulting messages; 2 = offensive/insulting calls; 3 = Attacking, recording and hanging on Internet; 4 = Broadcasting private photos/videos; 5 = Taking photos in dressing rooms, beach...to broadcast; 6 = Anonymous frightening calls; 7 = Threatening by calls or messages; 8 = Sexual harassment by cellphone/internet; 9 = Identity theft; 10 = Theft of password; 11 = Touching up photos/videos and broadcasting them; 12 = Isolating on social networks; 13 = Blackmailing by threatening to broadcast intimacy; 14 = Death threats; 15 = Slandering and spreading rumours to discredit someone. χ^2 = Chi square, *p* = significance.

Lastly, as shown in Table 6, the ANOVAs revealed significant differences in the amount of behaviour suffered as a function of the school network, with a greater amount suffered by cybervictims in public schools, although the effect size was very small.

Table 6. Means, standard deviations, analysis of variance, and effect size (Cohen's *d*) of the indicators of cyberbullying in public and private schools.

	Public		Private		<i>F</i> (1, 1991)	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Cybervictimization	0.56	1.83	0.38	1.36	5.54	.019	0.12
Cyberaggression	0.09	0.75	0.10	1.04	0.04	.947	0.08
Bully-cybervictimization	0.65	2.25	0.48	2.05	3.08	.080	0.14
Cyberobservation	1.58	3.53	1.36	2.92	2.34	.126	0.10

Note. *M* = mean, *SD* = standard deviation, *F* = Fisher's *F*, *p* = significance, *d* = Cohen's effect size.

Discussion and conclusions

The goals of the study were to analyze the prevalence of bullying and cyberbullying, as well as to explore the quantity of bullying and cyberbullying behaviours suffered, performed, and observed in public and private schools. Firstly, results showed that there were no differences between public and private schools in the percentage of pure-victims, pure-aggressors, bully-victims and observers either in bullying or in cyberbullying. However, when analyzing all the victims and aggressors (not just the pure-victims or the pure-aggressors), the data show that the percentage of students who had suffered physical, verbal, social and psychological aggression, those who had attacked others physically and verbally, and those who had observed physical, verbal and psychological aggression was significantly higher in the public schools. In a similar direction, there was a significantly higher percentage of cybervictims in public schools who had suffered four cyberbullying behaviours: receiving offensive/insulting messages, offensive/insulting calls, frightening anonymous calls, and identity theft. In addition, cyberobservers in public schools observed the following behaviour significantly more: attacking someone, recording the attack, and hanging it on the Internet.

Therefore, the first hypothesis was not confirmed because there were differences as a function of the type of school. The results obtained partially coincide with other studies that found no differences between private and public schools in bullying and cyberbullying (Barboza et al., 2009; Fernández-Tomé, 2015; Garaigordobil et al., 2015; Khamis, 2015), although they also ratify the results obtained by the ISEI-IVEI (2012) report, which found more victimization in public schools, or by Piñero-Ruiz et al. (2014), whose study found that students from public schools performed three kinds of (physical) aggressions significantly more than students from private schools. On another hand, we note that the results of all the studies are not unanimous, and our findings do not agree with other investigations that found more social and verbal aggressions (Defensor del Pueblo, 2007; León et al., 2011) in private schools, or with the study

of Mark and Ratliffe (2011), which found more incidents of cyberbullying in private schools. The discrepancies in the results regarding the school typology may be due to the differential characteristics of the samples in the diverse studies (sociocultural context, participants' age...), or to the different assessment instruments used, which may be measuring different behaviours. Therefore, we suggest conducting more research on this aspect.

Secondly, the results revealed that there is a significant difference in the amount of bullying and cyberbullying behaviour suffered and in the amount of behaviour observed in face-to-face bullying. Therefore, the second hypothesis is only partially confirmed because, although the effect size was small, these behaviours are suffered and observed to a greater extent in public schools. These results contrast with other studies that found no differences either in victimization or in cybervictimization as a function of the type of school (Garaigordobil et al., 2014, 2015), which might imply, along the lines of the proposal of Fu et al. (2013), that the lower the SEL level, the more severe the behaviour suffered and observed.

In conclusion, although the percentage of the different roles involved (pure-victims, pure-aggressors...) does not yield significant differences between public and private schools either in bullying or in cyberbullying, when breaking down and analyzing the behaviours and the victims and the aggressors (not just pure-victims and pure-aggressors), differences do emerge. These data indicate a greater number of victims, aggressors and observers in some face-to-face bullying behaviours, and of cybervictims and cyberobservers of some cyberbullying behaviours in public schools. These data indicate a greater number of victims, aggressors and observers in some face-to-face bullying behaviours, and of cybervictims and cyberobservers of some cyberbullying behaviours in public schools. In addition, higher rates of aggressive behaviour and cyberbullying suffered and of face-to-face behaviour observed were found in the public network.

This study has some limitations, such as the use self-reports, with the bias of social desirability and subjectivity involved. Although obtaining information triangularly helps to neutralize the bias of social desirability, the use of sociometric tools or hetero-reports could help to contrast the findings of the present study. In addition, this investigation did not have a very diverse SEL because, although it used a representative sample from the Basque Country, the characteristics of this population do not differ much as a function of the school. Both the private and public school students are from the middle SEL, in no case were extreme SEL levels included, unlike other reviewed research.

However, despite its limitations, the present study makes a contribution to the research on differences in peer bullying depending on the school attended. The in-depth analysis of the behaviours is also a contribution beyond the percentage of people involved in each role. It is relevant that, although the percentage of victims is not significantly different in the

public and private schools when analyzing the pure roles, the four explored forms of face-to-face bullying are different when analyzing the roles of general victims and aggressors (victims who have suffered bullying and also bullied, aggressors who have bullied and also suffered bullying behaviours...), which in turn ratifies the observers, who report having observed a greater percentage of public school participants in three out of the four face to-face behaviours under study.

Given the serious short- and long-term consequences of being involved in bullying and cyberbullying situations for the victims, the aggressors and the observers (Garaigordobil, 2011), it is recommended that both private and public schools should have protocols for cases of bullying/cyberbullying, in addition to programmes of prevention and school coexistence. Various programs have shown their

efficacy both for prevention and for intervention in situations of bullying and cyberbullying (Garaigordobil & Martínez-Valderrey, 2014, 2015). Programs for prevention and reduction of bullying and cyberbullying should promote improvement of the classroom's social climate, enhancing pro-social behaviour, cooperative conflict-resolution skills, empathy, comprehension-expression of emotions, control of anger, respect for differences, self-esteem, etc. (Garaigordobil, 2013).

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Appendix. Cyberbullying Behaviours Explored by the Cyberbullying Test: Screening of peer harassment

Bullying

Were you attacked or annoyed in this way in the past year?

1. With physical aggression
2. With verbal aggression
3. With social aggression
4. With psychological aggression

Cyberbullying

1. Have they ever sent you offensive and insulting messages by cellphone or Internet?
2. Have you ever received offensive and insulting calls on your cellphone or by Internet (Skype . . .)?
3. Have you ever been assaulted to tape the assault and hang it on the Internet?
4. Have they ever disseminated your private or compromising pictures or videos by Internet or cellphone?
5. Have they ever taken pictures of you without your permission in places such as locker rooms, beaches, or toilets and hung them on the Internet or disseminated them by cellphone?
6. Have you ever received anonymous calls to scare or frighten you?
7. Have they ever blackmailed or threatened you with calls or messages?
8. Have they ever harassed you sexually by cellphone or on the Internet?
9. Has anybody ever signed your blog, pretending to be you, making slandering comments, lying, or revealing your secrets?
10. Have they ever stolen your password to prevent your access to your blog or e-mail?
11. Have they ever touched up your photos or videos to disseminate them through social networks or YouTube to humiliate you or make fun of you?
12. Have they ever harassed you to isolate you from your social network contacts?
13. Have they ever blackmailed you, making you do things you did not want to do to prevent them from disseminating your intimate matters on the network?
14. Have they ever threatened to kill you or your family by cellphone, the social networks, or any other type of technology?
15. Have they ever slandered you through the Internet, telling lies about you to discredit you? Have they ever spread rumors about you to harm you?

Note: The 15 items of the Appendix are applied in the victim role (has suffered), and then in the aggressor role (has carried out), and finally, in the observer role (has seen).