

Effects of Cyberprogram 2.0 on “face-to-face” bullying, cyberbullying, and empathy

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Abstract

Background: The considerable prevalence of cyberbullying and its noxious effects on all those concerned reveals the need for programs to prevent and/or intervene in this type of violence. The purpose of this study was to assess the effects of Cyberprogram 2.0 on “face-to-face” bullying, cyberbullying, and empathy. **Method:** A sample of 176 adolescents of the Basque Country (Spain), aged between 13 and 15 years, who studied Compulsory Secondary Education, was used. Of them, 93 were randomly assigned to the experimental condition, and 83 to the control condition. The study used a pretest-posttest repeated measures design with a control group. Before and after the program, two assessment instruments were administered. **Results:** The results confirmed that the program significantly stimulated: (a) a decrease in the amount of bullying and cyberbullying behaviors suffered and/or carried out (level of victimization, perpetration, aggressive-victimization); and (b) an increase in the capacity for empathy. **Conclusions:** The study provides evidence of the effectiveness of Cyberprogram 2.0 to prevent and reduce bullying and cyberbullying. The discussion analyzes aspects of the program that may account for the significant intervention effects.

Keywords: bullying, cyberbullying, violence, empathy, adolescence, youth.

Resumen

Efectos del Cyberprogram 2.0 en el bullying “cara-a-cara”, el cyberbullying y la empatía. **Antecedentes:** la relevante prevalencia del cyberbullying y sus nocivos efectos sobre todos los implicados evidencia la necesidad de plantear programas para prevenir y/o intervenir sobre este tipo de violencia. El estudio tuvo como objetivos evaluar los efectos de Cyberprogram 2.0 en las conductas de bullying “cara-a-cara”, de cyberbullying y en la empatía. **Método:** se utilizó una muestra de 176 adolescentes del País Vasco (España), de 13 a 15 años, que cursan Educación Secundaria Obligatoria. Aleatoriamente, 93 fueron asignados a la condición experimental y 83 a la de control. El estudio utilizó un diseño de medidas repetidas pretest-postest con grupo de control. Antes y después del programa se administraron dos instrumentos de evaluación. **Resultados:** los resultados confirmaron que el programa estimuló significativamente: (a) una disminución de la cantidad de conductas de bullying y cyberbullying que se sufren y/o realizan (nivel de victimización, perpetración, victimización-agresiva); y (b) un aumento de la capacidad de empatía. **Conclusiones:** el estudio aporta evidencia de la eficacia de Cyberprogram 2.0 para prevenir y reducir el bullying y el cyberbullying. La discusión analiza aspectos del programa que pueden explicar los significativos efectos de la intervención.

Palabras clave: acoso, ciberacoso, violencia, empatía, adolescencia, juventud.

In recent years, there has been a rapid evolution of Information and Communication Technologies (ICT), as well as of children and adolescents’ easier access to them. This fast development of technology has led to new forms of communication and socialization that provide many advantages but also involve risks associated with their misuse and abuse. Among these negative phenomena is cyberbullying, which consists of using the ICT, mainly Internet and mobile phones, to perpetrate peer bullying. According to Smith et al. (2008), cyberbullying is an aggressive and intentional behavior repeated frequently over time by means of the use, by an individual or group, of electronic facilities targeting a victim who cannot easily defend him- or herself. Cyberbullying

is a type of bullying; nevertheless, it should be noted that harm caused through electronic means is different from that produced by traditional violence. One of the differences is that just one behavior (for example, hanging a photo or video on the web) can cause enormous harm to a person, among other things, because, with a single click, a photo or video can be instantaneously diffused to an enormous quantity of people. The rapid growth of this new form of bullying has generated the urgent need for its study (Garaigordobil, 2011a; Garaigordobil & Oñederra, 2009; Ortega-Ruiz & Núñez, 2012).

Violence, either considered a relational behavior or a way to resolve conflict between people, has nefarious and destructive consequences, both physical and psychological. When violence emerges at early ages, the situation becomes even more harmful. Any child, boy, girl or adolescent who is a victim or a witness of a violent act, in addition to suffering the immediate painful consequence, internalizes a negative experience by means of which he or she learns the mechanism of violent behavior. Many of these youngsters end up concluding that, in our world, the law

of the strongest prevails. Others will learn that the best way to avoid being a victim is to ally themselves with the aggressor. The aggressors, used to achieving benefits through their behavior, learn and internalize that using violence is a practical way to achieve goals. For the victims, it is a painful and traumatic experience. Peer violence has harmful consequences for all concerned, but with different symptoms and degrees of suffering. Although the most pronounced effects are observed in the victim, aggressors and observers are also the recipients of learnings and negative habits that will affect their current and future behavior. All people involved in situations of maltreatment, in any of the roles, are at greater risk of suffering from psychosocial maladjustment and psychopathological disorders in adolescence and adulthood (Garaigordobil, 2011abc).

In recent years, numerous efficacious programs have been developed for prevention and intervention in bullying. These programs contributed to the decrease in the behaviors of victimization (Fekkes, Pijpers, & Verloove-Vanhorick, 2006; Gini, 2004; Gollwitzer, Eisenbach, Atria, Strohmeier, & Banse, 2006; Kärnä et al., 2009; Milton & O'More, 2008; Olweus, 2004; Palladino, Nocentini, & Menesini, 2012; Williford et al., 2012), and perpetration (Fekkes et al., 2006; Gollwitzer et al., 2006; Kärnä et al., 2009; Olweus, 2004; Palladino et al., 2012; Sahin, 2012; Williford et al., 2012). In addition, some of these interventions have increased sensitivity, awareness, and empathy towards the victims (Ciucci, 2000; Menesini, Codecasa, Benelli, & Cowie, 2003; Sahin, 2012).

Cyberbullying, a phenomenon on the increase, is a source of great social concern. In spite of the great social relevance it is acquiring and of the variety of existing resources and protocols, the review of the literature shows that, currently, there are hardly any psychoeducational intervention programs aimed at preventing, reducing, intervening in and palliating the effects of cyberbullying that have been experimentally validated. In the review carried out, we could only identify a few programs aimed at prevention-treatment of cyberbullying that had been experimentally assessed.

The *Brief Internet Cyberbullying Prevention Program* (Doane, 2011) was carried out with 375 Canadian students between 18 and 23 years of age. The program was administered in the classroom and had three axes: (a) real news items about cyberbullying victims; (b) definition, types, situations, and prevalence of cyberbullying; and (c) cases of cyberbullying from the viewpoint of the victims. The assessment showed its efficacy because, at the end of the intervention and at follow-up, perpetration of cyberbullying and positive attitudes toward this type of behaviors decreased, and knowledge about cyberbullying increased, but no differences were found between experimental and control groups in empathy towards the victims.

The *ConRed Program*, “*Conocer, construir, convivir en Internet y las redes sociales*” ([Knowing, building, and coexisting in Internet and the social networks]; del Rey et al., 2012) was developed in Spain. The program was applied to 893 adolescents between 11 and 19 years of age. The intervention, which is applied at two levels—family and school (students and teachers)—, is characterized by three areas of intervention: (a) legality and harmful actions of bad behavior in virtual environments; (b) risks of internet; and (c) behaviors that do not produce greater social acceptance. Assessment of the program revealed a decrease in cyberbullying behaviors, especially cybervictimization, abuse of

the Internet, and the false perception of control over information in social networks.

The *cyber bullying prevention WebQuest course* (Lee, Zi-Pei, Svanstrom, & Dalal, 2013) was carried out with 30 students in the experimental group and 31 students in the control group (junior high school students of seventh grade of Taiwan). The experimental group received eight sessions of the teaching intervention. The results showed that the WebQuest course immediately and effectively enhanced knowledge of cyberbullying, reduced intentions, and retained the effects after the learning. But it produced no significant impact on the attitude toward cyberbullying.

The *KiVa antibullying program* (Williford et al., 2013). Using data from a randomized controlled group trial, the study examined differences in the frequencies of cyberbullying and cybervictimization between intervention ($N = 9,914$) and control students ($N = 8,498$). The participants were fourth to ninth-grade students in Finland. Results revealed a significant intervention effect on the frequency of cybervictimization KiVa students reported lower frequencies of cybervictimization at posttest than students in a control condition.

The significant prevalence of cyberbullying and its noxious effects (see reviews of Garaigordobil, 2011c, 2013) on all those involved shows the need to implement programs for the prevention of and/or intervention in this type of violence. Therefore, the main interest of the investigation is the analysis of the effect of an intervention program called “Cyberprogram 2.0” (Garaigordobil & Martínez-Valderrey, 2014a). Specifically, the purpose of the study was to experimentally assess the effects of Cyberprogram 2.0: (a) on face-to-face bullying (physical, verbal, social, psychological), as well as on electronic bullying or cyberbullying, in four indicators of bullying and cyberbullying, respectively (level of victimization, perpetration, observation, and aggressive-victimization); and (b) on the capacity for empathy—the capacity of understanding, cognitively and affectively, other human beings’ emotional states.

These objectives are proposed for three reasons: (1) The activities of the program create and structure situations of communication, cooperation, and empathy; (2) The relation between traditional violence and violence by electronic means (Del Rey, Elipe, & Ortega, 2012), as well as role of empathy in the prevention of violence, also of violence through ICTs (Ortega, Elipe, & Calmaestra, 2009), and (3) The great influence of the peer group during adolescence, a critical stage in the process of personality formation. In addition the objectives of this study complement those of a previous evaluation of the program (Garaigordobil & Martínez-Valderrey, 2014b) in which it was confirmed that the program stimulated a significant decrease in victimization of bullying and an increase of positive social behaviors (social conformity, help-collaboration, self-assurance-firmness, prosocial leadership).

Method

Participants

This study was carried out with a sample of 176 Spanish adolescents, aged between 13 and 15 years, who studied Compulsory Secondary Education (3rd and 4th grade). Although the initial sample was made up of 178 adolescents, two of them moved to another school before completing the program. Out

of the total sample, 93 (52.8%) were randomly assigned to the experimental condition and 83 (47.2%) to the control condition. Of them, 77 (43.8%) were male and 99 (56.3%) were female. No significant differences as a function of sex were found between experimental and control participants, $\chi^2 = 0.26, p > .05$. Twenty-five percent were 13 years old, 48.9% were 14, and 26.1% were 15. The study was carried out in three schools of Gipuzkoa, of medium-low (44.3%), normal-medium (21.6%), and medium-high (34.1%) socio-economic-cultural level. Of these students, 44.3% attended public-secular schools, and 55.7% private-religious centers. A random sampling technique was used to select the sample, taking into account the list of schools in Gipuzkoa and the type of center (public-private). In each center, the classrooms were numbered and randomly assigned to the groups (experimental or control). In two of the schools, two classrooms were randomly assigned to the experimental condition, and one classroom to the control condition, whereas in the third school, one classroom was assigned to the experimental condition, and two classrooms to the control condition.

Instruments

In order to assess the effects of the intervention before and after the program, we administered two assessment instruments with psychometric guarantees of reliability and validity.

Cyberbullying: Screening of Peer Harassment (Garaigordobil, 2013). This is a standardized instrument to assess bullying and cyberbullying behavior. The Bullying Scale assesses four types of presential bullying and has 12 items, grouped according to the role performed by the person being evaluated in the aggression situation: victim, aggressor, and observer. The Cyberbullying Scale explores 15 cybernetic-related behaviors (e.g., sending offensive/insulting messages by mobile/Internet, recording a beating and uploading the video to YouTube, sexual harassment, spreading rumors to discredit someone, stealing someone's password, isolating someone on social networks, death threats...). It has 45 items, grouped according to the role performed in the aggression situation: victim, perpetrator, and observer. The test requires participants to read the descriptions of the behaviors and report the frequency with which they were suffered, performed, or observed during the past year. Each behavior is scored as 0 (*never*), 1 (*sometimes*), 2 (*fairly often*), or 3 (*always*).

The test provides percentile scores of four indicators (levels of victimization, perpetration, observation, aggressive-victimization) of face-to-face bullying and cyberbullying behaviors, respectively. In both scales, the fourth indicator is obtained by adding score in victimization and in perpetration. Psychometric studies have confirmed its validity and reliability. The Cronbach alpha coefficient obtained by the Bullying scale (12 items) was adequate ($\alpha = .81$), in the same direction as those obtained in its three factors: Victimization ($\alpha = .70$), Perpetration ($\alpha = .71$) and Observation ($\alpha = .80$). In the scale of Cyberbullying (45 items), the Cronbach alpha coefficients were high ($\alpha = .91$), as in its three factors: Cybervictimization ($\alpha = .82$), Cyberperpetration ($\alpha = .91$), and Cyberobservation ($\alpha = .87$). Internal consistency obtained with the sample of this study ratifies adequate consistency in Bullying ($\alpha = .78$) and Cyberbullying ($\alpha = .86$). Factor analysis confirmed a 3-factor structure (victims, aggressors, observers in the Bullying and Cyberbullying Scales that explain, respectively, 57.89% and 40.15% of the variance). Studies of convergent validity showed

positive correlations ($r = .58$) between the level of victimization in situations of high bullying as measured with the Cyberbullying Test and with the AVE (Piñuel & Oñate, 2006).

IECA, Index of Empathy for Children and Adolescents (Bryant, 1982). This index assesses adolescents' empathy by means of 22 statements, some of which reflect situations in which there is empathetic arousal towards another person in a certain situation, whereas others reflect a lack of empathy. For example, "I like to see other people opening presents even if I don't get any present." "I can eat all the cookies even if I see that someone is watching me and would like one." The scale contains items that assess affective empathy and beliefs about the expression of feelings. The respondent rates each sentence on a 1-to-7-point scale, depending on the degree of agreement with the content of each sentence. The total score is obtained by adding the scores of all the items; the higher the score, the higher the level of empathy. The internal consistency of the original scale obtained a Cronbach's alpha of .68 in fourth graders and .79 in seventh graders, whereas that obtained with the sample of this study was higher ($\alpha = .83$). A study of test-retest reliability with 108 participants revealed a correlation coefficient of .81 with the sample of fourth graders and of .83 with seventh graders. Validity studies have found positive correlations with other measures of empathy and negative correlations with antisocial and violent behavior.

Procedure

The study used quasi-experimental design, a repeated measures pretest-posttest design with a control group (cross-sectional design with nonequivalent control group). The intervention program was the independent variable, and the dependent variables were bullying, cyberbullying, and empathy. With regard to the procedure, the following phases were established: (a) A letter was sent to the Directors of the randomly selected schools from the list of educational centers in Gipuzkoa, explaining the project and requesting their collaboration; (b) Communication with the Directors: we carried out an interview with those who accepted to collaborate in order to present the project and hand out the informed consent forms for the parents of the participants in the study; when the Director of the selected center refused to collaborate, the procedure was repeated with the next center on the list, taking into account the type (public-private) and/or the socio-economic-cultural level of the center that declined to participate; (c) After receiving the parents' consent, we administered the pretest to the experimental and control participants, using two assessment instruments to measure the dependent variables that the program was expected to affect; (d) Subsequently, the intervention program was applied in the 5 experimental groups (19 one-hour sessions), while the 4 control groups received the regular tutorship program of their center; and (e) After the intervention, at the posttest phase, we administered the same instruments as at pretest to the experimental and control groups. 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, gratuity, and the possibility to leave the study at any phase), and received the favorable report of the Ethics Committee of the University of the Basque Country (CEISH/112/2012).

Cyberprogram 2.0. is an intervention program to prevent and reduce cyberbullying (Garaigordobil & Martínez-Valderrey,

2014a). The intervention consisted of 19 one-hour sessions carried out during the school term. The activities that make up the program have four main goals: (a) to identify and conceptualize bullying/cyberbullying, and the three roles involved in this phenomenon; (b) to analyze the consequences of bullying/cyberbullying for victims, aggressors and observers, promoting critical capacity and the capacity to denounce such actions when they are discovered; (c) to develop coping strategies to prevent and reduce bullying/cyberbullying behaviors; and (d) other transversal goals such as developing positive variables (empathy, active listening, social skills, strategies to control anger-impulsivity, constructive conflict resolution, and tolerance to accept a diversity of opinions). Diverse sources were reviewed and drawn on to design the activities (Cerezo, Calvo, & Sánchez, 2011; Monjas & Avilés, 2006; Viejo, del Rey, Maldonado, & Mora-Merchán, 2010).

The application of the program to a group implies four constant variables that make up the methodological framework of the intervention: (a) *inter-session constancy*, which implies performing a weekly one-hour session; (b) *spatial-temporal constancy* because the program is applied on the same week day, at the same time, and in the same physical space, a large room, free of obstacles (gymnasium); (c) the *constancy of the adult* who directs the program, an adult with psychopedagogical training; and (d) *constancy in the session structure*. The sessions begin with the group members sitting in a circle on the floor. The adult explains the activity, its goals, and the participants carry out the action. Subsequently, there is a discussion and guided reflection phase, led by the adult. The adult promotes critical reflection through the formulation of questions, without judging. All the sessions follow this schedule, except for the first one in which the intervention program is introduced, and the program, the goals, the duration, and the type of activities that will be performed are explained. The program uses diverse techniques of group dynamics to stimulate the development of the activity and the debate: role-playing, brainstorming, case study, and guided discussion by means of formulating questions.

Data analysis

After verifying the basic assumptions, to assess changes in the dependent variables, firstly, descriptive analyses (means and standard deviations) and multivariate (MANOVA) and univariate

analyses of variance (ANOVA) were performed on the pretest scores of the experimental and control participants. Secondly, descriptive analyses and posttest analyses of covariance (posttest MANCOVA and ANCOVA), covarying the pretest differences between the two conditions, were performed. Finally, descriptive analyses and pretest-posttest analyses of covariance (pre-posttest MANCOVA and ANCOVA), covarying the pretest differences between the two conditions, were carried out. In addition, we calculated the effect size (Cohen's *d*: small < .50, moderate .50-.79, large ≥ .80) in each variable, at pretest, posttest, and in the pretest-posttest differences. The statistical analyses were performed with the SPSS 20.0 program.

Results

To assess the effects of the program on bullying and cyberbullying behaviors (victimization, perpetration, observation, aggressive-victimization) and on the capacity for empathy, firstly, multivariate analysis was carried out on the pretest scores of the experimental and control groups, using the data from the Cyberbullying Test. The results of the pretest MANOVA for the 8 variables of bullying and cyberbullying, Wilks' Lambda, $\Lambda = 0.852$, $F(6, 169) = 4.87$, $p < .001$, revealed statistically significant group differences at the pretest phase. Subsequently, descriptive analysis (means, standard deviations) and ANOVAs were performed with each bullying and cyberbullying variable, comparing both conditions at pretest. Likewise, we obtained the means and deviations of the scores on empathy (IECA) and, using ANOVA, compared the pretest scores of the experimental and control groups. The results obtained at pretest are presented in Tables 1 and 2.

The results of the pretest ANOVAs (see Table 1) indicated that, before the intervention, there were statistically significant group differences in three indicators of bullying (perpetration, observation, aggressive-victimization), and in one indicator of cyberbullying (perpetration), with the experimental group displaying higher scores. The effect size was small in victimization of bullying and in all the indicators of cyberbullying, but in perpetration, observation and aggressive-victimization of bullying, the effect size was moderate. In empathy, the results revealed no group differences before the intervention.

Secondly, the results of the MANCOVA carried out with the posttest scores for the bullying and cyberbullying variables

Table 1

Means and standard deviations in indicators of bullying-cyberbullying and empathy, in experimental and control groups, in pretest, posttest, and pretest-posttest differences

	Pretest				Posttest				Pretest-Posttest differences			
	Experimental		Control		Experimental		Control		Experimental		Control	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Victimization of bullying	0.75	1.10	0.55	1.01	0.57	0.88	0.94	1.77	-0.18	1.12	0.39	1.90
Perpetration of bullying	1.57	1.88	0.54	0.86	0.70	1.09	0.93	1.39	-0.87	1.91	0.39	1.41
Observation of bullying	3.73	2.69	2.16	2.18	2.62	2.34	2.43	2.28	-1.11	2.93	0.27	2.63
Aggressive-victimization of bullying	2.32	2.36	1.10	1.51	1.26	1.49	1.87	2.95	-1.06	2.38	0.77	3.04
Victimization of cyberbullying	1.20	3.26	0.90	3.41	0.10	0.39	1.51	3.80	-1.10	3.27	0.61	4.64
Perpetration of cyberbullying	0.69	1.43	0.25	0.93	0.04	0.25	0.70	1.77	-0.65	1.41	0.45	1.73
Observation of cyberbullying	3.29	3.24	2.60	2.94	2.91	3.38	3.37	5.21	-0.38	3.66	0.77	4.97
Aggressive-victimization of cyberbullying	1.89	3.80	1.16	3.69	0.14	0.48	2.20	5.43	-1.75	3.78	1.04	6.01
Capacity for empathy	96.15	21.22	97.48	18.42	103.35	19.09	98.08	17.32	7.20	17.43	0.60	11.69

Table 2

Results of the analysis of variance (Pretest ANOVA, Posttest ANCOVA, Pretest-Posttest differences ANCOVA) and effect size (*d*) in indicators of bullying-cyberbullying and empathy, between experimental and control groups

	Pretest ANOVA			Posttest ANCOVA			Pretest-Posttest ANCOVA		
	F(1, 174)	p	d	F(1, 174)	p	d	F(1, 174)	p	d
Victimization of bullying	1.53	.217	.18	5.22	.024	.27	5.22	.024	.36
Perpetration of bullying	20.80	.000	.70	5.46	.021	.18	5.46	.021	.75
Observation of bullying	17.86	.000	.64	1.25	.264	.08	1.25	.264	.49
Aggressive-victimization of bullying	16.40	.000	.61	6.87	.010	.26	6.87	.010	.67
Victimization of cyberbullying	0.35	.551	.10	13.89	.000	.52	13.89	.000	.42
Perpetration of cyberbullying	5.52	.020	.36	14.55	.000	.52	14.55	.000	.69
Observation of cyberbullying	2.14	.145	.22	3.63	.058	.10	3.63	.058	.27
Aggressive-victimization of cyberbullying	1.68	.196	.19	14.89	.000	.53	14.89	.000	.56
Capacity for empathy	0.19	.664	.06	11.77	.001	.28	11.77	.001	.28

Note: *d* = Cohen's effect size. Experimental *n* = 93, Control *n* = 83

as a whole, Wilks' Lambda, $\Lambda = 0.911$, $F(6, 168) = 2.60$, $p < .05$, revealed statistically significant group differences at the posttest phase. Descriptive analyses and ANCOVAs were performed with the posttest scores of the dependent variables, the results of which are presented in Tables 1 and 2. The results show significant differences between both conditions: the experimental group decreased in various indicators of bullying and cyberbullying (victimization, perpetration, aggressive-victimization) and it increased in empathy.

Finally, to assess the efficacy of the program in bullying and cyberbullying behaviors, we analyzed the pretest-posttest change. The results of the MANCOVA carried out on the pretest-posttest differences for the bullying and cyberbullying variables as a whole, Wilks' Lambda, $\Lambda = 0.834$, $F(6, 168) = 5.58$, $p < .001$, revealed statistically significant group differences in the pretest-posttest change. Complementarily, descriptive analyses (means and standard deviations) and ANCOVAs were performed with the pretest-posttest differences of the dependent variables (bullying, cyberbullying, empathy). The results are displayed in Table 1 and 2.

Comparing the change produced in the experimental and control participants (see Tables 1 and 2) the results of the pretest-posttest ANCOVA, which took the pretest differences between the two conditions into account, showed that the experimental participants significantly decreased their bullying behaviors at the levels of victimization ($M = -0.18$), perpetration ($M = -0.87$) and aggressive-victimization ($M = -1.06$), whereas the control participants increased in all three indicators ($M = 0.39$, $M = 0.39$, and $M = 0.77$, respectively). In cyberbullying behaviors, the results pointed in the same direction, the experimental participants significantly decreased their mean score in the behaviors of victimization ($M = -1.10$), perpetration ($M = -0.65$) and aggressive-victimization ($M = -1.75$), whereas the control group slightly increased in all three indicators ($M = 0.61$, $M = 0.45$, and $M = 1.04$, respectively). At the level of observation of bullying and cyberbullying behaviors, the differences between the two conditions were not statistically significant; nevertheless, we note that the experimental group decreased observation of bullying ($M = -1.11$), and cyberbullying behaviors ($M = -0.38$) to a greater extent than the control group, which, in fact, increased their observation of bullying ($M = 0.27$) and cyberbullying behaviors ($M = 0.77$). In empathy, the results of the ANCOVA of pretest-posttest differences showed that

the experimental group significantly increased their capacity for empathy ($M = 7.20$) compared with the control group ($M = 0.60$). The effect size was small in victimization of bullying/cyberbullying and empathy, and moderate in perpetration of bullying/cyberbullying and aggressive-victimization of bullying/cyberbullying.

Discussion

Firstly, the results obtained confirm that the program had a very positive effect, because, in the experimental participants, it promoted a decrease of the amount of aggressive behaviors of face-to-face bullying (physical, verbal, social, psychological behaviors) and of cyberbullying (decrease in the level of victimization, perpetration, and aggressive-victimization bullying/cyberbullying). These results are coherent with other studies showing the efficacy of antibullying interventions to decrease violent peer behaviors of victimization and perpetration, either presential (Fekkes et al., 2006; Gini, 2004; Gollwitzer et al., 2006; Kärnä et al., 2009; Milton & O'More, 2008; Olweus, 2004; Palladino et al., 2012; Williford et al., 2012) or electronic (del Rey et al., 2012; Doane, 2011; Lee et al., 2013; Williford et al., 2013).

Secondly, the results confirm that Cyberprogram 2.0 significantly increased the capacity for empathy of the adolescents who participated in this experience. Therefore, our results ratify studies by other authors (Ciucci, 2000; Menesini et al., 2003; Sahin, 2012) who have carried out interventions to prevent violence, showing increases in empathy.

There are various explanations for the results of this study, related both to the characteristics of the activities of the program and to the connections of cyberbullying with other variables. Many program activities emphasize the emotional experience of the victim, the feelings of the people involved, the negative consequences of bullying/cyberbullying for victims, perpetrators and observers, the responsibility of the observers, and the critical analysis of the aggressors. In addition, the effects of Cyberprogram 2.0, a program of prevention and reduction of cyberbullying, on face-to-face bullying and on empathy may be explained by the relation between bullying and cyberbullying (Del Rey, Elipe, & Ortega, 2012), as well as by the role of empathy in the prevention of violence (Ortega, Elipe, & Calmaestra, 2009).

The study provides evidence of the effectiveness of Cyberprogram 2.0 to prevent and reduce bullying and cyberbullying. The results, taken as a whole, allow us to emphasize the importance of implementing programs during childhood and adolescence to promote socio-emotional development, to improve coexistence, and prevent/reduce violence. The best way to prevent violence is to promote harmonious coexistence, and our proposal of the Cyberprogram 2.0, an intervention program to prevent cyberbullying, an evidence-based practice, is made within this context.

As a limitation of the study, we note the use of self-reports, with the bias of social desirability involved, and in future research, we suggest using hetero-reports in which parents and teachers inform of adolescents' attitudes and behaviors and/or observational techniques to assess and ratify the effects of the program. The study of Martín-Babarro (2014), which emphasizes the importance of assessing the group context, points in this direction. Moreover, in order to verify the maintenance or stability of the change produced by the intervention, future studies should include a follow-up assessment one year after completing the intervention.

Nevertheless, we note that the only way to combat bullying in all its expressions is through the cooperation of all the people

involved (teachers, parents, students, school staff...). Therefore, intervention in situations of maltreatment should contemplate various levels: (a) Institutional: the entire educational center should be involved; (b) Family: it is essential to involve the parents in the process, informing them of the results of the assessments carried out at school, as well as requesting their collaboration and follow-up when bullying incidents occur; (c) Group: the entire classroom must be involved; and (d) Individual: working with the aggressor, the victim, and both together. As future lines of research, we note the need to systematize strategies aimed at parents and teachers (which would enhance the positive impact of the intervention in the prevention and reduction of violent behavior), as well as the development of programs to prevent cyberbullying during childhood.

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