



STUDYDADDY

**Get Homework Help
From Expert Tutor**

Get Help

Effects of the Cyberbullying Prevention Program Media Heroes (*Medienhelden*) on Traditional Bullying

Enrique Chaux^{1*}, Ana María Velásquez², Anja Schultze-Krumbholz³, and Herbert Scheithauer³

¹Department of Psychology, Universidad de los Andes, Bogotá, Colombia

²Center for Research in Education-CIFE, Universidad de los Andes, Bogotá, Colombia

³Department of Education and Psychology, Freie Universität Berlin, Berlin, Germany

There is considerable debate over whether cyberbullying is just another form of bullying, or whether it is a problem distinct enough to require specific intervention. One way to explore this issue is to analyze whether programs designed to prevent traditional bullying help prevent cyberbullying, and whether programs designed to prevent cyberbullying prevent traditional bullying. The main goal of the current study was to analyze the spillover effects of the cyberbullying prevention program Media Heroes (*Medienhelden*) on traditional bullying. Media Heroes promotes empathy, knowledge of risks and consequences, and strategies that allow bystanders to defend victims from cyberbullying. Mixed ANOVAs were conducted comparing pretest and post-test (6 months after intervention) measures of 722 students (ages 11–17) assigned to a long (15 sessions) intervention, a short (1 day) intervention, and a control group. In addition to confirming the previously reported effects on cyberbullying, Media Heroes was found to reduce traditional bullying. Effects were larger for the long-version of the program than for the short 1-day version. No effects were found on victimization by either cyberbullying or traditional bullying. Strategies to complement traditional and cyberbullying prevention efforts are discussed. *Aggr. Behav.* 42:157–165, 2016. © 2016 Wiley Periodicals, Inc.

Keywords: traditional bullying; cyberbullying; program evaluation; school-based prevention; Media Heroes

INTRODUCTION

As cyberbullying became the subject of academic analyses, a question has been raised about whether it should be considered as just another form of bullying, or whether it is a problem with distinctive characteristics and dynamics. On the one hand, cyberbullying has some specific characteristics which may differentiate it qualitatively from traditional bullying (Campbell, 2005; Slonje & Smith, 2008; Suzuki, Asaga, Sourander, Hoven, & Mandell, 2012; Tokunaga, 2010; Ybarra & Mitchell, 2004)¹. For instance, due to the physical distance associated with cyberbullying, it may be more difficult to generate empathy toward the potential victim. Also, the option of anonymity could lead to more severe levels of aggression. From the victim's point of view, the experience can seem harsher as offenses are quickly observed by a much larger audience, are present all day and every day, and may be perceived as a situation without escape. On the other hand, several studies have

shown that victims of cyberbullying tend to be victims of traditional bullying (Katzner, Fetschenhauer, & Belschak, 2009a; Olweus, 2012; Raskauskas & Stoltz, 2007), and that cyberbullies tend to be traditional bullies (Katzner, Fetschenhauer & Belschak, 2009b; Li, 2007; Olweus, 2012; Raskauskas & Stoltz, 2007). However, not all studies have found this co-occurrence between cyberbullying and traditional bullying. In particular, based on an online survey, Ybarra, Diener-West, and Leaf (2007) found that only 37% of those who were victimized electronically during the last month had also been

Contract grant sponsor: European Commission; contract grant number: JLS/2008/DAP3/AG/1211-30-CE-0311025/00-69 (DAPHNE III).

Conflict of interests: The third and fourth authors were some of the leaders in the development of the Media Heroes program. The first author has been involved in the adaptation and replication of the program in other cultural contexts.

*Correspondence to: Enrique Chaux, Department of Psychology, Universidad de los Andes, Carrera 1 E # 18A-70, Bogotá, Colombia. E-mail: echaux@uniandes.edu.co

Received 24 November 2014; Revised 13 October 2015; Accepted 22 October 2015

DOI: 10.1002/ab.21637

Published online in Wiley Online Library (wileyonlinelibrary.com).

¹We use the term “traditional bullying” instead of the commonly used term “face-to-face bullying” since traditional bullying includes relational or indirect aggression, which are usually not face-to-face (Archer & Coyne, 2005).

victims of bullying at school. To date, there is still no agreement on whether cyberbullying is a different entity from traditional bullying.

Risk factors for cyberbullying and traditional bullying might be similar. For instance, lack of empathy has been shown among cyberbullies (Pfetsch, Müller, & Ittel, 2014; Renati, Berrone, & Zanetti, 2012; Schultze-Krumbholz & Scheithauer, 2009, 2013; Steffgen, König, Pfetsch, and Melzer, 2011), as well as among traditional bullies (Chaux, Molano, & Podlesky, 2009; Decety, Michalska, Akitsuki, & Lahey, 2009; Endresen & Olweus, 2001). Those showing low levels of empathy might be at risk for participating in both cyber and traditional bullying.

Peer dynamics observed in traditional bullying might also be present in cyberbullying situations. Specifically, traditional bullying has been shown to occur in a social context where bystanders are present (Atlas & Pepler, 1998; Craig & Pepler, 1997) and can play different roles (Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996). Peers can contribute to the maintenance or escalation of aggression if they actively reinforce the bullying or if they remain passive without intervening (O'Connell, Pepler & Craig, 1999). They can also stop the bullying when they intervene on behalf of the victim (Hawkins, Pepler & Craig, 2001). These same roles seem to be present in cyberbullying situations and participant roles seem to coincide. For example, Wachs (2012) found that 59.2% of defenders, 63.4% of passive bystanders, and 63.6% of assistants of cyberbullying were also defenders, passive bystanders, and assistants of traditional bullying, respectively.

The debate about whether traditional bullying and cyberbullying are different phenomena is crucial for deciding whether the same strategies that have been shown to be effective in the prevention of traditional bullying should also be implemented to prevent cyberbullying, or whether new strategies are needed. One way to tackle this issue is to test whether interventions designed to prevent traditional bullying prevent cyberbullying, and whether interventions designed to prevent cyberbullying prevent traditional bullying. Williford et al. (2014) tested the former of these options and found that KiVa, a school-based program that seeks to prevent traditional bullying, mainly by promoting empathy and involvement among observers of bullying situations, was able to reduce cyberbullying and cybervictimization after a year of implementation. Garaigordobil and Martínez-Valderrey (2015) tested the second option and found that Cyberprogram 2.0, a program designed to prevent cyberbullying, was able to significantly reduce traditional bullying. The current study seeks to contribute to this debate by analyzing this latter option, that is,

whether a program designed to prevent cyberbullying can have an effect on traditional bullying. In particular, the main goal of the study was to identify the effect that *Medienhelden* (Media Heroes), a school-based program designed to prevent cyberbullying, can have on victimization by traditional bullying (i.e., traditional victimization) and on traditional bullying perpetration (i.e., traditional bullying) in schools.

MEDIA HEROES (*Medienhelden*)

Media Heroes (*Medienhelden* in German) is a theoretically based preventive intervention program developed in Germany for the school context (Schultze-Krumbholz, Zagorscak, Siebenbrock, & Scheithauer, 2012; Wölfer et al., 2014). Based on the Theory of Planned Behavior (Ajzen, 1991) and on the participant roles approach to understanding bullying dynamics (Salmivalli, 2010), Media Heroes seeks to prevent cyberbullying mainly by promoting empathy, providing knowledge about definitions, Internet risks and safety, and legal consequences, and promoting assertive ways for bystanders to intervene. Two versions of Media Heroes were developed: (i) a long-version consisting of fifteen 45-min sessions and (ii) a short-version consisting of four 90-min sessions that is supposed to be implemented on a single day. Activities include role-playing, debates, analyses of written stories, news and films, cooperative learning, and student-parent presentations (for more details see Schultze-Krumbholz et al., 2012; Schultze-Krumbholz, Zagorscak, Siebenbrock & Scheithauer, this issue; Wölfer et al., 2014). Evaluation of Media Heroes showed that it contributed to the reduction of cyberbullying perpetration, as well as to increases in empathy, perspective-taking skills, self-esteem, and subjective health, especially among those who received the long-version of the program (Schultze-Krumbholz, Wölfer, Jäkel, Zagorscak, & Scheithauer, 2012; Wölfer et al., 2014 see also Schultze-Krumbholz, this issue).

As mentioned, perpetrators of cyber and traditional bullying (as well as victims of cyber and traditional bullying) are sometimes the same individuals. In such cases, an effect of Media Heroes on traditional bullying might be due to the fact that they stopped being bullies (or they were no longer victims) of both types. In other words, evidence for a spillover effect might be stronger if Media Heroes also had an effect on those who were traditional bullies but not cyberbullies (or traditional victims but not victims of cyberbullying) at the beginning. Thus, a secondary goal of the study was to investigate the differentiated effects of Media Heroes on those who were traditional bullies (traditional victims), cyberbullies (victims of cyberbullying), both or none, before the implementation of the program.

Two hypotheses, related to the main and secondary goal of the study, were tested:

- (1) Assuming that traditional bullying and cyberbullying are specific cases of a larger problem, it was predicted that since Media Heroes has been shown to reduce cyberbullying (Wölfer et al., 2014), it would also reduce traditional bullying.
- (2) These reductions should also be found among those students who were initially perpetrators of traditional bullying but not of cyberbullying, and among those who were initially victims of traditional bullying but not of cyberbullying.

METHODS

The current study is based on a pretest–post-test quantitative experimental evaluation of the Media Heroes program in which schools randomly assigned participating classes to three conditions: long-version, short-version, and control group.

Participants

Participants of the evaluation of Media Heroes were 1,075 adolescents (mean age 13.36; range 11–17 years; $SD = 1.00$) from five schools in Berlin, Germany. Four (78.4% of students) were academic college preparatory schools (*Gymnasien*), and one (21.6% of students) was a school which offers academic and vocational degrees (*Gesamtschule*). These schools were self-selected, responding to an invitation to participate in the research project. Schools were located in neighborhoods from a diversity of socio-economic backgrounds (2 high, 2 middle, and 1 low SES;). Participants were initially 897 students, but there was attrition of 19.5% of students from pretest to post-test. Thus, longitudinal data for the outcome variables was available for 722 students. Sample size was determined by the number of students who agreed to participate, and whose parents had signed consent forms, from all the participating classrooms of the five schools which agreed to participate. No specific sample size calculation was conducted. However, the sample size obtained is consistent with what is needed to detect small to medium effect sizes according to known effect sizes usually found in preventive intervention evaluation studies (e.g., Merrell, Gueldner, Ross, & Isava, 2008; Wilson, Lipsey, & Derzon, 2003). No significant differences were found between participating and nonparticipating students on several variables measured at Time 1 (e.g., cyberbullying; Schultze-Krumbholz, Zagorscak, Wölfer, & Scheithauer, 2014). About half (51.8%) of participants were girls.

Procedure

Participating schools decided whether they would implement the long- or short-version of the program. They were asked to randomly select intervened and control classes. Teachers in control classes were asked not to implement the program for 12 months, and received the program materials at the end of such period. Of the 35 participating classes, 12 received the long-intervention, 7 the short-intervention and 16 were control groups. No particular differences were observed between schools that chose long- or short-versions.

Participation in the intervention was obligatory, as part of students' ethics classes. However, participation in the evaluation was voluntary. Letters explaining the study and consent forms were given to the students to pass on to their parents, and only students who agreed to participate and who returned their parents' consents were allowed to take part in the study. Teachers collected the consent forms and informed the researchers which students had received their parents' permission to participate. Data about non-participation, collected in 21 of the 35 classes, indicated that 4.8% of students were not allowed to participate (non-participation ranged from 0% to 20% in different classes). Pretest measures were collected before the intervention started (January 2011) and 9 months later (i.e., approximately six months after the intervention finished, in November/December 2011). Before the implementation, teachers received sixteen hours of training (see more details in Schultze-Krumbholz et al., this issue).

Measures

Students responded the European Cyberbullying Intervention Project Questionnaire (ECIPQ; Del Rey et al., 2015), a collection of measures developed as part of the European Cyberbullying Intervention Project, a collaborative research project funded by the European Union (see bullyingandcyber.net). Specifically, Traditional Bullying (i.e., Traditional Bullying Perpetration; $\alpha = .80$) was measured with seven self-reported items (e.g., "I spread rumors about someone"). *Traditional Victimization* (i.e., Victimization by Traditional Bullying; $\alpha = .77$) was also measured with seven items (e.g., "Someone hit, kicked, or pushed me"). *Cyberbullying* (i.e., Cyberbullying Perpetration; $\alpha = .88$) was measured with 11 items (e.g., "I said nasty things to someone or called them names using texts or online messages"). *Cybervictimization* (i.e., Victimization by Cyberbullying; $\alpha = .70$) was also measured with 11 items (e.g., "Someone posted embarrassing videos or pictures of me online"). Response options were "no," "once or twice," "once or twice a month," "once a week," and "more than once a week." The following global introduction was

presented before the questions: "In this section we're going to ask you about possible experiences concerning bullying and cyberbullying in your context of life (school, friends, people you know . . .), both as a victim of bullying and/ or as a bully. Your answers will be confidential. Have you experienced any of the following behavior in the last 2 months?" No specific definitions of bullying or cyberbullying were provided. del Rey et al. (2015) present validity information about the measures.

Analytic Plan

Bivariate Pearson's correlations were initially conducted to explore the relations between the four outcome variables (cyberbullying, traditional bullying, cybervictimization, and traditional victimization) at the pretest and post-test.

Given the nested nature of the data (students within classes), the assumption of independence of observations could be violated. In this case, standard errors could be biased and therefore need to be corrected, for example, by means of multilevel modeling. To test whether this correction was necessary, exploratory analyses were then conducted to calculate intraclass correlations (ICC) and design effects. A correction was considered necessary when design effects exceeded 2 (Muthen & Satorra, 1995).

Results did not show a need to account for the nesting of the data (described below). Therefore, comparisons of changes in students' outcomes as a function of their experimental condition were analyzed via two-way interactions in mixed ANOVAs. Two types of analyses were conducted, corresponding to each of the goals of the study. To address the main goal, four sets of mixed ANOVAs were run, one for each outcome: cyberbullying, traditional bullying, cybervictimization, and traditional victimization. Pretest and post-test scores were included in the analyses as repeated measures and the experimental condition was included as a fixed factor. Moderation by sex was examined by including the two-way interaction between sex and time (pretest vs. post-test), and the three-way interaction between sex, time, and group (control, long- and short-intervention) in repeated ANOVAs with cyberbullying, traditional bullying, cybervictimization, and traditional victimization as outcomes.

To respond to the secondary goal of the study, a second set of mixed ANOVAs replicated the former ones, but included the initial bullying/victimization status as an additional factor. Specifically, for bullying, children were divided into four categories: cyberbully only (0 in score of traditional bullying, but greater than 0 in score of cyberbullying), traditional bully only (0 in cyberbullying, but greater than 0 in traditional bullying), both cyber- and traditional bully (greater than 0 in both),

and nonbully (0 in both). Accordingly, for victimization, children were divided into: cybervictim only (0 in traditional victimization, but greater than 0 in cybervictimization), traditional victim only (0 in cybervictimization, but greater than 0 in traditional victimization), both cyber- and traditional victim (greater than 0 in both), and nonvictim (0 in both). Cut-off points of zero versus greater than zero were chosen given the low levels of traditional bullying and cyberbullying among the students in the sample. Results were similar when medians were chosen as the cut-off points. Cut-off points greater than the medians were not chosen because the low number in some groups did not permit us to conduct the moderation analyses. These analyses intended to differentiate the effects of the program depending on the students' initial status.

RESULTS

Bivariate Pearson's correlations showed significant correlations between the outcome measures at both the pretest and posttest (Table I). Correlations were large ($>.6$) between cyberbullying and traditional bullying (at both pretest and post-test), and between cybervictimization and traditional victimization (at post-test).

In order to examine possible baseline differences between the experimental conditions (long-, short-intervention, and control), one way ANOVAs were conducted separately for each outcome at pretest. These comparisons yielded non-significant differences across the three experimental conditions (for cyberbullying, $F_{(2,883)} = .45$, $P = .64$; for traditional bullying, $F_{(2,881)} = 2.35$, $P = .10$; cybervictimization, $F_{(2,889)} = 2.06$, $P = .13$; for and traditional victimization, $F_{(2,890)} = .77$, $P = .46$). These results confirmed the comparability of the groups across the conditions.

To explore whether or not it was necessary to account for the nesting of the data via multilevel analyses, ICCs, as well as design effects, were calculated for the outcomes. As children from the three experimental conditions did not differ in the outcomes' scores at pretest, we were able to calculate an index of outcome change based on difference scores (post-test-pretest). Then, we examined ICCs for each of the four outcomes: $ICC(\Delta\text{cyberbullying}) = 0.03$; $ICC(\Delta\text{traditional bullying}) = 0.04$; $ICC(\Delta\text{cybervictimization}) = 0.02$; and $ICC(\Delta\text{traditional victimization}) = 0.02$.

Design effects were estimated based on the following formula:

$$1 + (\text{average cluster size} - 1) * ICC$$

Multilevel analysis is considered necessary when the design effect value is above 2. Taking into consideration that the average cluster size was 25, all values for the

TABLE I. Pretest and Posttest Correlations Among the Outcome Variables

	Cyberbullying	Traditional bullying	Cybervictimization	Traditional victimization
Cyberbullying	0.20*	0.63*	0.35*	0.22*
Traditional bullying	0.60*	0.41*	0.26*	0.40*
Cybervictimization	0.33*	0.38*	0.21*	0.44*
Traditional victimization	0.24*	0.53*	0.62*	0.38*

Note. Coefficients above the diagonal correspond to pretest scores. Coefficients below the diagonal correspond to posttest scores. Coefficients on the diagonal correspond to pretest and posttest correlations.

* $P < .01$.

difference scores were found to be below or just on this threshold (1.76, 2.03, 1.55, and 1.39, for cyberbullying, traditional bullying, cybervictimization, and traditional victimization, respectively). Therefore, we ruled out the need to account for the nesting of the data.

Program Effects

To address the main goal of the study, four sets of mixed 2×3 (time \times condition) ANOVAs were conducted to test for the program effects on each outcome (see Table II for descriptive statistics). Results showed statistically significant interactions between time (pretest, posttest) and condition (long-, short-intervention, control) for cyberbullying (Wilk's $\lambda = .98$, $F_{(2,706)} = 6.50$, $P = .00$, $\eta^2 = .02$) and for traditional bullying (Wilk's $\lambda = .99$, $F_{(2,706)} = 5.37$, $P = .00$, $\eta^2 = .01$). As shown in Table II, pairwise comparisons indicated that, for cyberbullying, children in the control group increased significantly in this behavior, while children in the long intervention showed a significant decrease (see Fig. 1). In the case of traditional bullying, a significant decrease was found for the long intervention,

whereas children in the control group and in the short intervention did not significantly change after the implementation of the program (see Fig. 2). Analyses of moderation by sex did not reveal any significant effects. A tendency ($P = 0.057$) was found, however, for a three-way interaction by which changes in cyberbullying according to group (increase in control group, no changes in short-intervention, and decrease in long-intervention) were found for boys, but not for girls.

Program Effects As a Function of Initial Status

In order to examine whether the program had differential effects depending on the initial status of children in terms of their level of bullying and victimization, children were categorized depending on whether the behavior was observed to any extent. That is, if children had a score equal to zero, they were treated as non-bullies or -victims. Conversely, those who had a score different from zero were thought as being prone to bullying or victimization. This categorization led to the following groups and sample sizes: for bullying perpetration: cyberbully only ($N = 34$), traditional bully

TABLE II. Pretest and Post-test Scores by Each Experimental Condition, With Pairwise Comparisons Test of Significance

	<i>N</i>	Mean pretest (<i>SD</i>)	Mean posttest (<i>SD</i>)	Post-test-pretest	<i>P</i>	Cohen's <i>d</i>
Cyberbullying						
Control	347	0.08 (0.22)	0.14 (0.48)	0.06*	.00	.16
Short intervention	135	0.08 (0.18)	0.08 (0.24)	0.00	.95	.00
Long intervention	227	0.10 (0.29)	0.04 (0.11)	-0.06*	.02	-.27
Traditional bullying						
Control	348	0.34 (0.45)	0.39 (0.68)	0.05	.10	.09
Short intervention	135	0.29 (0.44)	0.23 (0.45)	-0.06	.22	-.14
Long intervention	226	0.32 (0.48)	0.21 (0.39)	-0.10*	.01	-.25
Cybervictimization						
Control	352	0.09 (0.19)	0.13 (0.33)	0.04	^a	.15
Short intervention	132	0.11 (0.22)	0.14 (0.30)	0.02	^a	.11
Long intervention	230	0.09 (0.18)	0.09 (0.19)	0.00	^a	.00
Traditional victimization						
Control	352	0.41 (0.48)	0.38 (0.59)	-0.03	^a	-.06
Short intervention	136	0.41 (.56)	0.37 (0.60)	-0.04	^a	-.07
Long intervention	230	0.37 (0.52)	0.25 (0.39)	-0.11	^a	-.26

*Statistically significant difference.

^aPairwise comparisons significance tests were not conducted for these variables, given that no significant interactions were found in the main analyses.

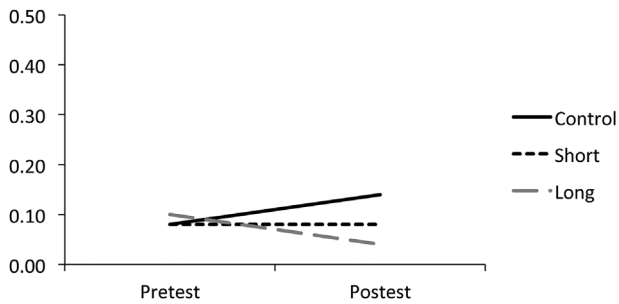


Fig. 1. Program effects on cyberbullying.

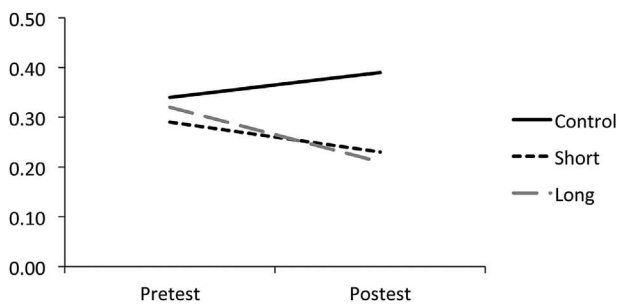


Fig. 2. Program effects on traditional bullying.

only ($N=327$), both cyber- and traditional bully ($N=251$), and non-bully ($N=272$). For victimization: cybervictim only ($N=47$), traditional victim only ($N=314$), both cyber- and traditional victim ($N=311$), and non-victim ($N=218$).

Mixed $2 \times 3 \times 4$ (time \times condition \times initial status) ANOVAs were conducted for each of the four outcomes. Three-way interactions were found for traditional bullying perpetration (Wilk's $\lambda = .98$, $F_{(6,697)} = 2.11$, $P = .04$, $\eta^2 = .02$) and for traditional victimization (Wilk's $\lambda = .98$, $F_{(6,703)} = 2.12$, $P = .04$, $\eta^2 = .02$). Further pairwise comparisons showed that differences in traditional bullying perpetration could be found particularly for nonbullies and for children who initially scored greater than zero in both cyber- and traditional bullying. In the first case, nonbullies increased their bullying behavior in the control (mean difference = 0.14, $P = .01$) and short intervention (mean difference = 0.17, $P = .04$) conditions, whereas non-bullies in the long intervention (mean difference = 0.07, $P = .21$) condition did not change significantly after the implementation of the program. For children grouped in the cyber- and traditional bullying category, a significant decrease in traditional bullying behavior was observed for the short (mean difference = -0.29 , $P = .00$) and long (mean difference = -0.32 , $P = .00$) intervention conditions, while no significant change was observed in the control group (mean difference = 0.06, $P = .24$).

That is, in the control group, traditional bullying increased for those who were initially not bullies of any kind, and remained for those who were initially bullies of both kinds. In contrast, in the long-intervention group, traditional bullying did not increase for those who initially were not bullies of any kind, and decreased for those who were already bullies of both kinds.

In the case of traditional victimization, pairwise comparisons revealed significant differences for traditional victims only, cybervictims only, and non-victims. In the case of traditional victims only, there was a decrease in traditional victimization for the short (mean difference = -0.23 , $P = .01$) and long (mean difference = -0.15 , $P = .02$) interventions, while the control group (mean difference = -0.02 , $P = .62$) did not change significantly. For nonvictims, a significant increase was observed for the control (mean difference = 0.13, $P = .04$) and short intervention (mean difference = 0.21, $P = .03$) conditions, whereas children in the long intervention did not change significantly (mean difference = 0.07, $P = .30$). Finally, a non-expected result was found for cybervictims only. Although children in the control (mean difference = 0.17, $P = .19$) and long intervention (mean difference = 0.07, $P = .72$) conditions did not change significantly, children in the short intervention condition showed an increase (mean difference = 0.82, $P = .00$) in traditional victimization, after the intervention.

Summarizing, in the control group, victimization by traditional bullying increased among those who were not victims of any kind of bullying and remained for those who were already victims of traditional bullying. In contrast, in the long-intervention (but not in the short-intervention), victimization by traditional bullying did not increase among those who were not victims of any kind of bullying and decreased for those who were already victims of traditional bullying.

DISCUSSION

The results of the current study confirmed that participating in Media Heroes, a program developed specifically to prevent cyberbullying, led to a reduction in traditional bullying perpetration (although not victimization), in addition to the previously reported reduction of cyberbullying perpetration (Wölfer et al., 2014). These effects were found to be greater for the long version of the program than for its short version. The positive effects on traditional bullying perpetration were confirmed for those who initially reported not bullying (neither cyber nor traditional bullying) as there was a significant increase in the control group that was not observed in the long intervention. Furthermore, the positive effects were also found for those who simultaneously reported some cyberbullying and some

traditional bullying, but not for those who only reported some traditional bullying (but no cyberbullying). Thus, the spillover effect of Media Heroes on traditional bullying perpetration was partially confirmed.

No significant effects were found on victimization by either traditional or cyberbullying when the three conditions (control, short and long-interventions) were compared. There are some possible reasons to explain the difference between the effects on perpetration but not on victimization. First, as cyberbullying is not restricted to those who share the same classes or schools, students in the intervention classes might still be victims of cyberbullying generated by students from classes or schools (or other individuals) not intervened by the program. Second, after the intervention, students might be more aware of cyberbullying being a problematic behavior. Thus, a possible reduction in instances of cybervictimization could have been compensated by an increase in tendency to report cyberbullying if they have been targeted. Finally, it might take longer to evidence changes in the perception of being victimized than in the perception of being a perpetrator because the effects of aggression (especially relational and cyberbullying) might continue long after the perpetrators have stopped behaving aggressively.

Although no significant direct effects were found on traditional victimization, some interactions were observed when initial levels of victimization were considered. In particular, positive effects were found for those who at the beginning were not victims of cyberbullying but were victims of traditional bullying, as well as for those who were initially nonvictims (either of cyber or traditional bullying). In addition, a surprising increase in the number of students who reported being victims of traditional bullying was found for those who participated in the short intervention and who, initially, had only reported being victim of cyberbullying. A possible explanation might be that, with the intervention, they became aware that they were also being victims of traditional bullying.

In general, the results support the idea that an intervention designed to prevent cyberbullying can help prevent students from bullying others in traditional ways as well. This complements the evidence that KiVa, a program designed to prevent traditional bullying, can affect the prevention of cyberbullying (Williford et al., 2014), and that Cyberprogram 2.0, a cyberbullying prevention program, can also prevent traditional bullying (Garaigordobil & Martínez-Valderrey, 2015). These results suggest that traditional bullying and cyberbullying are related sufficiently closely for prevention efforts for one to have spillover effects on the other. This result should not be understood, however, as confirmation that only one of them is needed in the effort to prevent both.

In contrast, it suggests that careful analyses should be conducted to identify the most effective ways to complement them. One option could be to focus prevention efforts on different types of bullying in different ages. For instance, prevention of traditional bullying might be more appropriate at elementary grades where contact with the virtual media is still limited and where programs like KiVa seem to be more effective (Kärnä et al., 2011a,b, 2013). In contrast, prevention of cyberbullying might be more significant to students in secondary grades since interactions during adolescence occur in great part through electronic media. A cyberbullying prevention program might become an opportunity to remember, practice, and deepen the knowledge, attitudes, and socio-emotional competencies they might have learned in elementary school, and to apply them in a context that is meaningful to the challenges facing their adolescent relationships.

There are some limitations to the study that need to be acknowledged. First, it is based entirely on self-reports which could be influenced by social desirability. Although having control groups reduces the risk of social desirability affecting the results, as the same bias could be present in the reports from those in the control groups, it does not eliminate such risk completely because the intervention itself could have increased the students' desire to present themselves as less aggressive. Although the sample size was large enough to evaluate the direct effects of the program, the moderation analyses implied the comparison of many small groups, limiting its power. The fact that some significant interactions were found indicates that the effects are large enough to be observed even with small sample sizes. Another limitation was that the levels of bullying, and of cyberbullying in particular, were small at the pretest. As such, the effects of the intervention could have been limited because of the limited range for improvement.

Randomization occurred at the classroom levels, that is, some classes within the same schools were in the control group while others received the interventions. Thus, another limitation is that there could have been contamination of the effects from the treated classes to the control classes, implying that the real effects of the program could have been larger than the observed effects. Finally, the evaluation was conducted in a specific urban multicultural context for which Media Heroes was specifically developed. It is not clear whether the effects would be the same in other cultural contexts. In order to investigate this, a replication is starting in a very different cultural context, with a higher level of bullying and cyberbullying, and with a larger sample. This could elucidate the positive effects that a program such as Media Heroes could have on a global

problem such as cyberbullying, and on traditional bullying as well.

In any case, the results are promising with respect to the challenge of preventing traditional bullying and cyberbullying, and suggest that traditional bullying and cyberbullying may be close enough for interventions to profit from the synergy when preventing one can help prevent the other.

ACKNOWLEDGMENTS

This research was supported by a research grant from the DAPHNE III program to combat violence against children, young persons and women of the European Commission (action number: JLS/2008/DAP3/AG/1211-30-CE-0311025/00-69; project title “Cyberbullying in Adolescence: Investigation and Intervention in Six European Countries” granted to the University of Bologna, Italy). The views expressed in this article are ours and do not represent the granting agency. The writing of the article was made possible by a Georg Forster Fellowship granted to the first author by the Alexander von Humboldt Foundation, Germany. The authors thank all principals, teachers, parents, and students who took part in this study and would especially like to acknowledge the commitment of the teachers who implemented the prevention program in their classes. We thank Manuela León and John Archer for their careful stylistic revision of the manuscript. We are also grateful to ad hoc editor Dr. Tracy Vaillancourt as well as two anonymous reviewers for their careful revision and their suggestions to previous versions of the manuscript.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179–211. doi: 10.1016/0749-5978(91)90020-t
- Archer, J., & Coyne, S. M. (2005). An integrated review of indirect, relational, and social aggression. *Personality and Social Psychology Review*, 9, 212–230. doi: 10.1207/s15327957pspr0903_2
- Atlas, R. S., & Pepler, D. J. (1998). Observations of bullying in the classroom. *Journal of Educational Research*, 92, 86–99. doi: 10.1080/00220679809597580
- Campbell, M. A. (2005). Cyber bullying: An old problem in a new guise? *Australian Journal of Guidance and Counselling*, 15, 68–76. doi: 10.1375/ajgc.15.1.68
- Chaux, E., Molano, A., & Podlesky, P. (2009). Socio-economic, socio-political and socio-emotional variables explaining school bullying: A country-wide multilevel analysis. *Aggressive Behavior*, 35, 520–529. doi: 10.1002/ab.20320
- Craig, W., & Pepler, D. (1997). Observations of bullying and victimization in the schoolyard. *Canadian Journal of School Psychology*, 2, 41–60. doi: 10.1177/082957359801300205
- Decety, J., Michalska, K. J., Akitsuki, Y., & Lahey, B. B. (2009). Atypical empathic responses in adolescents with aggressive conduct disorder: A functional MRI investigation. *Biological Psychology*, 80, 203–211. doi: 10.1016/j.biopsycho.2008.09.004
- Del Rey, R., Casas, J. A., Ortega-Ruiz, R., Schultze-Krumbholz, A., Scheithauer, H., Smith, P., ... & Plichta, P. (2015). Structural validation and cross-cultural robustness of the European Cyberbullying Intervention Project Questionnaire. *Computers in Human Behavior*, 50, 141–147. doi: 10.1016/j.chb.2015.03.065
- Endresen, I. M., & Olweus, D. (2001). Self-reported empathy in Norwegian adolescents: Sex differences, age trends, and relationship to bullying. In A. C. Bohart, & D. J. Stipek (Eds.), *Constructive and destructive behavior: Implications for family, school, and society* (pp. 147–165). Washington, DC, US: APA.
- Garaigordobil, M., & Martínez-Valderrey, V. (2015). Effects of Cyberprogram 2.0 on “face-to-face” bullying, cyberbullying, and empathy. *Psicothema*, 27, 45–51. doi: 10.7334/psicothema.2014.78
- Hawkins, D. L., Pepler, D. J., & Craig, W. M. (2001). Naturalistic observations of peer interventions in bullying. *Social Development*, 10, 512–527.
- Kärnä, A., Voeten, M., Little, T. D., Alanen, E., Poskiparta, E., & Salmivalli, C. (2013). Effectiveness of the KiVa antibullying program: Grades 1–3 and 7–9. *Journal of Educational Psychology*, 105, 535–551. doi: 10.1037/a0030417
- Kärnä, A., Voeten, M., Little, T. D., Poskiparta, E., Alanen, E., & Salmivalli, C. (2011a). Going to scale: A nonrandomized nationwide trial of the KiVa Antibullying Program for grades 1–9. *Journal of Consulting and Clinical Psychology*, 79, 796–805. doi: 10.1037/a0025740
- Kärnä, A., Voeten, M., Little, T. D., Poskiparta, E., Kaljonen, A., & Salmivalli, C. (2011b). A large-scale evaluation of the KiVa antibullying program: Grades 4–6. *Child Development*, 82, 311–330. doi: 10.1111/j.1467-8624.2010.01557.x
- Katzer, C., Fetchenhauer, D., & Belschak, F. (2009a). Cyberbullying: Who are the victims? A comparison of victimization in Internet chatrooms and victimization in school. *Journal of Media Psychology*, 21, 25–36. doi: 10.1027/1864-1105.21.1.25
- Katzer, C., Fetchenhauer, D., & Belschak, F. (2009b). Cyberbullying in Internet-Chatrooms: Wer sind die Täter? Ein Vergleich von Bullying in Internet-Chatrooms mit Bullying in der Schule aus der Täterperspektive. [Cyberbullying in Internet-Chatrooms: Who are the perpetrators? A comparison of bullying behavior in school and in chatrooms from the perpetrators’ perspective]. *Zeitschrift für Entwicklungspsychologie und Pädagogische Psychologie*, 41, 33–44. doi: 10.1026/0049-8637.41.1.33
- Li, Q. (2007). New bottle but old wine: A research of cyberbullying in schools. *Computers in Human Behavior*, 23, 1777–1791. doi: 10.1016/j.chb.2005.10.005
- Merrell, K. W., Gueldner, B. A., Ross, S. W., & Isava, D. M. (2008). How effective are school bullying intervention programs? A meta-analysis of intervention research. *School Psychology Quarterly*, 23, 26–42. doi: 10.1037/1045-3830.23.1.26
- Muthen, B., & Satorra, A. (1995). Complex sample data in structural equation modeling. *Sociological Methodology*, 25, 267–316. doi: 10.2307/271070
- O’Connell, P., Pepler, D., & Craig, W. (1999). Peer involvement in bullying: Insights and challenges for intervention. *Journal of Adolescence*, 22, 437–452.
- Olweus, D. (2012). Cyberbullying: An overrated phenomenon? *European Journal of Developmental Psychology*, 9, 520–538. doi: 10.1080/17405629.2012.682358
- Pfetsch, J., Müller, C. R., & Ittel, A. (2014). Cyberbullying und Empathie: Affektive, kognitive und medienbasierte Empathie im Kontext von Cyberbullying im Kindes- und Jugendalter. [Cyberbullying and empathy. Affective, cognitive and media-based empathy in the context of cyberbullying in childhood and adolescence]. *Diskurs Kindheits- und Jugendforschung*, 9, 23–37.

- Raskauskas, J., & Stoltz, A. D. (2007). Involvement in traditional and electronic bullying among adolescents. *Developmental Psychology, 43*, 564–575. doi: 10.1037/0012-1649.43.3.564
- Renati, R., Berrone, C., & Zanetti, M. A. (2012). Morally Disengaged and Unempathic: Do Cyberbullies Fit These Definitions? An Exploratory Study. *CyberPsychology, Behavior and Social Networking, 15*, 391–398. doi: 10.1089/cyber.2012.0046
- Salmivalli, C. (2010). Bullying and the peer group: A review. *Aggression and Violent Behavior, 15*, 112–120. doi: 10.1016/j.avb.2009.08.007
- Salmivalli, C., Lagerspetz, K., Björkqvist, K., Österman, K., & Kaukiainen, A. (1996). Bullying as a group process: Participant roles and their relations to social status within the group. *Aggressive Behavior, 22*, 1–15. doi: 10.1002/(SICI)1098-2337
- Schultze-Krumbholz, A., & Scheithauer, H. (2009). Social-behavioural correlates of cyberbullying in a German student sample. *Zeitschrift für Psychologie/Journal of Psychology, 217*, 224–226. doi: 10.1027/0044-3409.217.4.224
- Schultze-Krumbholz, A., & Scheithauer, H. (2013). Is cyberbullying related to lack of empathy and social-emotional problems? *International Journal of Developmental Science, 7*, 161–166. doi: 10.3233/DEV-130124
- Schultze-Krumbholz, A., Wölfer, R., Jäkel, A., Zagorscak, P., & Scheithauer, H. (2012). Effective prevention of cyberbullying in Germany: The Medienhelden Program. Paper presented at the 10th ISRA World Meeting, Luxembourg.
- Schultze-Krumbholz, A., Zagorscak, P., Siebenbrock, A., & Scheithauer, H. (2012). *Medienhelden: Unterrichtsmanual zur Förderung von Medienkompetenz und Prävention von Cybermobbing*. München, Germany: Ernst Reinhardt.
- Schultze-Krumbholz, A., Zagorscak, P., Wölfer, R., & Scheithauer, H. (2014). Prävention von Cybermobbing und Reduzierung aggressiven Verhaltens Jugendlicher durch das Programm Medienhelden: Ergebnisse einer Evaluationsstudie. *Diskurs Kindheits- und Jugendforschung, 9*, 61–79.
- Slonje, R., & Smith, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology, 49*, 147–154. doi: 10.1111/j.1467-9450.2007.00611.x
- Steffgen, G., König, A., Pfetsch, J., & Melzer, A. (2011). Are cyberbullies less empathic? Adolescents' cyberbullying behavior and empathic responsiveness. *Cyberpsychology, Behavior, and Social Networking, 14*, 643–648. doi: 10.1089/cyber.2010.0445
- Suzuki, K., Asaga, R., Sourander, A., Hoven, C. W., & Mandell, D. (2012). Cyberbullying and adolescent mental health. *International Journal of Adolescent Medicine and Health, 24*, 27–35. doi: 10.1515/ijamh.2012.005
- Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior, 26*, 277–287. doi: 10.1016/j.chb.2009.11.014
- Wachs, S. (2012). Moral disengagement and emotional and social difficulties in bullying and cyberbullying: Differences by participant role. *Emotional and Behavioural Difficulties, 17*, 347–360. doi: 10.1080/13632752.2012.704318
- Williford, A., Elledge, L. C., Boulton, A. J., DePaolis, K. J., Little, T. D., & Salmivalli, C. (2014). Effects of the KiVa antibullying program on cyberbullying and cybervictimization frequency among Finnish youth. *Journal of Clinical Child & Adolescent Psychology, 42*, 820–833. doi: 10.1080/15374416.2013.787623
- Wilson, S. J., Lipsey, M. W., & Derzon, J. H. (2003). The effects of school-based intervention programs on aggressive behavior: A meta-analysis. *Journal of Consulting and Clinical Psychology, 71*, 136–149. doi: 10.1037/0022-006X.71.1.136
- Wölfer, R., Schultze-Krumbholz, A., Zagorscak, P., Jäkel, A., Göbel, K., & Scheithauer, H. (2014). Prevention 2.0: Targeting cyberbullying @ school. *Prevention Science, 15*, 879–887. doi: 10.1007/s11121-013-0438-y
- Ybarra, M. L., Diener-West, M., & Leaf, P. J. (2007). Examining the overlap in internet harassment and school bullying: Implications for school intervention. *Journal of Adolescent Health, 41*, S42–S50. doi: 10.1016/j.jadohealth.2007.09.004
- Ybarra, M. L., & Mitchell, K. J. (2004). Youth engaging in online harassment: Associations with caregiver-child relationships, internet use, and personal characteristics. *Journal of Adolescence, 27*, 319–336. doi: 10.1016/j.adolescence.2004.03.007

Copyright of Aggressive Behavior is the property of John Wiley & Sons, Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.



STUDYDADDY

**Get Homework Help
From Expert Tutor**

Get Help