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**Anti-cyberbullying interventions at school: Comparing the effectiveness of gratitude and psychoeducational programmes**

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# **Anti-cyberbullying interventions at school: Comparing the effectiveness of gratitude and psychoeducational programmes**

Previous studies evidence the benefits of gratitude and psychoeducation to diminish the performing of aggressive behaviours. The aim of this study was to assess the effectiveness of a brief gratitude programme and a brief psychoeducational programme to prevent cyberaggression in adolescents. A sample of 483 adolescents (11–17 years old) participated in the study, being assigned to one of the following three groups: gratitude programme, psychoeducational programme and the control. Both programmes comprised four one-hour sessions. All participants completed the cyberaggression subscale of the European Cyberbullying Intervention Project Questionnaire (ECIP-Q) at three time points: pre-test, post-test and three-month follow-up. Significant decreases in cyberaggression were found at post-test in the psychoeducational group and at the three-month follow-up in the gratitude group. These findings provide the first evidence of the benefits of gratitude training in adolescents to prevent cyberaggression over time.

**Keywords:** gratitude intervention; psychoeducation; cyberaggression; prevention; adolescents.

## **Introduction**

Adolescence is a period of multiple stressful situations and challenges to be faced (e.g. biological, social or educational), all of which influences adolescents' mental health and well-being. In recent decades, the scientific literature has examined personal resources and strengths that can be fostered in adolescents to improve their coping with these changes and their quality of life, gratitude being one resource that is receiving increasing interest due to its benefits for social and psychological adjustment (e.g. Baumsteiger et al., 2019; Bono et al., 2019; Portocarrero et al., 2020). Gratitude is not just about replying kindly when someone pays attention to what another people have done to benefit him/her; its development implies a broader vision, where grateful people are aware and appreciative of the positive experiences and situations that occur to them

(McCullough et al., 2002; Skrzelinska & Ferreira, 2022; Wood et al., 2010). Among the benefits of developing an appreciation of positive aspects, those who are more grateful have been found to have higher levels of well-being and satisfaction and lower levels of maladjustment (e.g. stress, anxiety, depression or negative affect) (e.g. Jans-Beken, 2019; Portocarrero et al., 2020; Skrzelinska & Ferreira, 2022; Sun et al., 2019). According to Fredrickson's (1998) broaden-and-build model, these benefits on mental health and well-being can be explained by the fact that gratitude would be a positive emotion that facilitates the use of a wider range of behaviours in several situations, favouring the construction of personal and social resources. These resources (e.g. adaptive coping) would contribute positively to levels of well-being and health (e.g. Sun et al., 2019).

In the social domain, gratitude has also been shown to have important benefits for foster good interpersonal functioning (e.g. Bono et al., 2019). Following, Algoe's (2012) find-remind-and-bind theory, the development of gratitude would facilitate the finding and remembering of positive aspects and experiences in social exchanges. These positive memories would favour a greater strengthening of social bonds, leading to greater satisfaction in social relationships (e.g. Bono, Mangan, et al., 2020; O'Connell et al., 2018). This may have important implications in the adolescent population, where social dynamics and relationships are one of the most important and influential aspects at this age (Viejo & Ortega-Ruiz, 2015). Previous research has shown evidence of how being a grateful adolescent favours higher levels of school satisfaction and more satisfactory social relationships, as well as increased empathy, perceived social support and a greater tendency to engage in prosocial behaviours towards others (e.g. Bono, Mangan, et al., 2020; Caleon et al., 2019; Chen et al., 2020; Kong et al., 2021; Yang et al., 2021).

Moreover, the awareness and appreciation of positive experiences can develop and have benefits not only in positive and ordinary situations but also in difficult and stressful experiences. Several studies show that in coping with adverse events, those adolescents who are more grateful are able to appreciate other experiences and positive aspects, despite suffering a highly stressful experience, rather than focusing exclusively on negative aspects (e.g. Kowalski et al., 2022). All of this facilitates more adaptive coping with these situations, thus reducing the possible negative consequences on their health and well-being that could result (e.g. Bono, Reil, et al., 2020; Kowalski et al., 2022; Kwok et al., 2019).

One of the problematic and stressful phenomena that can affect adolescents worldwide at present, when the use of information and communication technologies is frequent and not specific to a single place, is cyberbullying (e.g. Camerini et al., 2020; Evangelio et al., 2022). Although there are different definitions of cyberbullying, in general it can be defined by an aggressive and intentional behaviour realised by a person or group with the purpose of harming another person by using electronic devices or the Internet (Evangelio et al., 2022). The use of digital media (e.g. social networks or digital platforms) means that cyberbullying has several characteristics that are different from face-to-face aggression, such as a greater permanence, spread and audience of aggressive behaviour, as well as the possibility of anonymity of the aggressor (Camelford & Ebrahim, 2016; Deschamps & McNutt, 2016). A large number of studies show evidence of the severe and negative short- and long-term impact on health and well-being, not only in cybervictims but also in cyberaggressors (e.g. more internalising and externalising problems, increased suicide risk and lower academic performance, life satisfaction and social adjustment, among others; Camerini et al., 2020; Evangelio et al., 2022). For this reason, the need to develop and provide programmes that help to prevent

these violent behaviours has acquired special relevance (e.g. Camelford & Ebrahim, 2016). Although the scientific literature has analysed the risk and protective factors for cyberaggression, this theoretical knowledge has hardly been reflected in the development and implementation of intervention proposals (Gaffney et al., 2019). So far, the anti-cyberbullying programmes developed are suggested to help prevent cyberbullying (e.g. Camelford & Ebrahim, 2016; Sorrentino et al., 2018), although their effects are limited (Gaffney et al., 2019). Some studies (e.g. Camelford & Ebrahim, 2016) show how psychoeducation promotes awareness of the risks and consequences of cyberbullying, helping to prevent cyberbullying in adolescents. Moreover, despite providing evidence to reduce cyberaggression behaviours, many programmes comprise several components, such as psychoeducation and training of skills, and consider several points of view (e.g. school community, family or students) (e.g. Sorrentino et al., 2018). Therefore the contribution of each component to the prevention of these behaviours is unclear (Menesini & Salmivalli, 2017; Polanin et al., 2022). In addition, some studies have even found smaller effects for the prevention of cyberaggression than for cybervictimisation (Gaffney et al., 2019). Thus, further research on this topic is needed to improve the effectiveness of anti-cyberbullying programmes (e.g. Gaffney et al., 2019).

In violent and aggressive situations, the scientific literature has examined the role that gratitude can play. Previous findings suggest that not only can gratitude help to buffer the consequences after suffering these situations (e.g. Kwok et al., 2019; Rey et al., 2019) but that it can also be a protective factor that helps to prevent adolescents from becoming involved in them (e.g. Chen et al., 2020; Sasaki et al., 2020). Moreover, several research studies have found that grateful people not only tend to exhibit fewer behavioural problems (e.g. Bono et al., 2019; Sun et al., 2019; You et al., 2022) but also

perform less aggressive behaviours (e.g. Baumsteiger et al., 2019; DeWall et al., 2012; García-Vázquez et al., 2020; Michailidis, 2021), even in provocative or threatening interactions and situations (DeWall et al., 2012; Sasaki et al., 2020). Specifically in cyberbullying contexts, previous cross-sectional studies suggest that gratitude may also be a protective factor for preventing cyberaggressive attitudes and behaviours (e.g. Chen et al., 2020; Zeng et al., 2020).

Regarding the practice of gratitude, although many of the gratitude interventions developed have focused on promoting increased levels of gratitude and improved indicators of psychological adjustment (e.g. Oltean et al., 2022; Wong et al., 2017), others have provided evidence on the fostering of good social functioning (e.g. favouring positive relationships, an improvement of friendship quality or an increase of prosocial behaviour) (Bono, Mangan, et al., 2020; Mesurado et al., 2019; O'Connell et al., 2018), as well as to diminish aggressive behaviours (Deng et al., 2019; Lombas et al., 2019). Nevertheless, further development and research on effective gratitude interventions is required, especially in interpersonal functioning and in adolescent populations where there are few studies (Baumsteiger et al., 2019; Dickens, 2019) and even less so in the cyberbullying context.

Considering the above-mentioned gaps on cyberbullying and gratitude interventions (e.g. Baumsteiger et al., 2019; Dickens, 2019; Gaffney et al., 2019), this research has considered the benefits of gratitude on interpersonal relationships and as a potential protective factor for aggressive behaviours (e.g. Bono et al., 2019; Bono, Mangan, et al., 2020; Chen et al., 2020; Deng et al., 2019). Thus, in the current study we wanted to explore the effectiveness of a brief gratitude programme and a brief psychoeducational programme on bullying and cyberbullying. Due to the scarcity of research on the issue and the exploratory nature of this study, we hypothesised that

adolescents in both the gratitude and the psychoeducational programmes would perform less cyberaggressive behaviours, without making any specific assumptions in this respect.

## **Method**

### ***Participants***

An initial sample of 605 adolescents participated in this repeated pre-post-following-test measure study with three conditions. Of this sample, 91.40% (553 participants) completed the post-test (five weeks after pre-test) and 82.48% (499 participants) completed the follow-up (three months after the end of the interventions). After eliminating extremes values, the final sample comprised 483 adolescents (45.34% males), who participated in one of the three following groups: gratitude ( $N = 169$ ), psychoeducational ( $N = 192$ ) and control ( $N = 122$ ). Adolescents were from three educational centres in the region of Andalusia (Spain) and 95.86% were Spanish. Their mean age was 13.50 years ( $SD = 1.26$ ; range = 11–17 years) and their study grade range was grade 7 to grade 10. No significant differences were observed between the three sample groups with respect to age, sex, or grade. The sociodemographic variables for each sample group can be seen in Table 1.

**Table 1.** Socio-demographic characteristics of the study sample

VARIABLES		Control	Gratitude	Psychoeducational	<i>p-value</i>
		group	group	group	
		N = 122	N = 169	N = 192	
<b>Age</b> <i>Mean ± SD</i>	Years	13.59 ± 1.36	13.47 ± 1.23	13.38 ± 1.27	.293
<b>Sex</b> [ <i>N (%)</i> ]	Female	76 (62.3)	87 (51.5)	101 (52.6)	.143
	Male	46 (37.7)	82 (48.5)	91 (47.4)	
<b>Grade</b> [ <i>N (%)</i> ]	7 <sup>th</sup>	35 (28.7)	40 (23.7)	49 (25.5)	.533
	8 <sup>th</sup>	23 (18.9)	49 (29.0)	51 (26.6)	
	9 <sup>th</sup>	30 (24.6)	36 (21.3)	48 (25.0)	
	10 <sup>th</sup>	34 (27.9)	44 (26.0)	44 (22.9)	

### **Measures**

To examine changes over time, a cyberaggression measure was collected at three time points: pre-test (time 1; T1), post-test (time 2; T2) and three-month follow-up (time 3; T3). For this, the cyberaggression subscale of the Spanish version of the European Cyberbullying Intervention Project Questionnaire was used (ECIP-Q; Ortega-Ruiz et al., 2016; original version developed by Del Rey et al., 2015). This subscale comprises 11 items assessing the frequency of cyberbullying behaviours performed during the last two months (pre-test and three-month follow-up measures) and the last month (post-test measure). The subscale is answered using a five-point Likert scale (since 0 = never to more to 4 = more times a week). In this study the reliability (Cronbach's alpha and McDonald's omega) of the pre-test ( $\alpha = .839$ ;  $\omega^2 = .879$ ) and post-test ( $\alpha = .859$ ;  $\omega^2 = .898$ ) measures was high. Although the three-month follow-up had a lower score ( $\alpha = .678$ ;  $\omega^2 = .751$ ), it was acceptable.

### **Procedure**

Six education centres were contacted to participate in this study and three of them were

accepted. Each centre was selected to participate in one of the three groups (i.e. gratitude, psychoeducational and control). All directors, heads of studies and educational counsellors were informed about the purpose and methodology that would be carried out in their education centre, depending on the group to which they were assigned. Written informed consent to participate in the study was signed by the directors. Later, every centre informed the students' parents about the process and methodology of the study. In two education centres, written informed consent was obtained from the parents. In one education centre, passive consent was obtained from the parents (i.e. they did not clearly refuse the adolescent's participation in the study). The same research member was present for the three data collections in the three groups and carried out both programmes (i.e. gratitude and psychoeducational). This study followed the principles of the Declaration of Helsinki (2013) and was approved by the Ethics Committee of the University of Málaga (94-2021-H).

### *Gratitude group*

The gratitude programme comprised four one-hour sessions (one session per week). Considering the potential benefits of offering a more integrative and comprehensive intervention (Baumsteiger et al., 2019), this programme included the three aspects necessary for the practice of gratitude that tend to be present in grateful people, such as attention to positive aspects, reflection and appreciation, and expressing gratitude to others (Baumsteiger et al., 2019; Emmons & Stern, 2013; Watkins, 2014). Throughout the sessions, the adolescents learned what gratitude is, its benefits and importance, and how they can develop and train it in the bullying and cyberbullying context. For this, the necessary approaches and activities that have shown evidence of promoting gratitude and increasing some indicators of social and psychological adjustment were adapted in terms of format and duration to interpersonal, stressful, bullying and cyberbullying

situations (i.e. silver lining, mental subtraction, gratitude questions, gratitude journal, benefit appraisal, gratitude expression and gratitude letter) (Deng et al., 2019; Froh et al., 2014; Kowalski et al., 2022; Payne et al., 2020; Shankland & Rosset, 2017; Watkins, 2014; Wong et al., 2017). The format of the activities was diverse (i.e. paper-pencil; audiovisual material; individual and group reflection questions and discussion). An adapted gratitude journal was written every day for three weeks by every participant (i.e. starting after the end of the first session). An adapted gratitude letter was also written by every participant. Due to the subsequent gratitude visit is “one of the more involved and difficult exercises to complete” (Payne et al., 2020, p. 166), leading to feelings of nervousness and awkwardness in addition happiness (Payne et al., 2020), this last part of the activity was optional, although participants were motivated to make the visit (see Table 2 for a summary of the content).

#### *Psychoeducational group*

The psychoeducational programme comprised four one-hour sessions (one session per week). Throughout the sessions, adolescents learned what bullying and cyberbullying is, the common and different characteristics, ways of performing them, the involved roles and importance of bystanders, and their consequences, risk behaviours and what they can do to prevent or manage these situations. Although psychoeducation has been involved in several multi-component interventions (e.g. Menesini & Salmivalli, 2017; Polanin et al., 2022), as a single intervention it also had potential benefits in raising awareness of risks and improving communication with others in these situations (e.g. Camelford & Ebrahim, 2016). The format of activities was aimed at active participation, instead of passive receipt of information, as well as encouraging the adolescents to work in teams and respect different opinions. Moreover, audiovisual material and

individual/group reflection questions and discussion were used (see Table 2 for a summary of the content).

*Control group*

Adolescents in this group did not receive any intervention. Participants only completed the subscale of cyberaggression at three time points, with the same period between data collections as for the gratitude and psychoeducational groups. After finishing this study and following ethical principles, the possibility of receiving the most effective programme (i.e. gratitude or psychoeducational) will be offered to the participants of this group.

**Table 2.** Summary of the content of the two interventions

<b>GRATITUDE GROUP</b>	<b>PSYCHOEDUCATIONAL GROUP</b>
<b>First session: Objectives</b>	
(1) What gratitude is, its benefits, its practice and as a resource to help to prevent/manage difficult situations (e.g. (cyber)bullying). (2) Awareness of positive aspects.	(1) Identify what bullying is and the ways of performing it.
<b>First session: Activities</b>	
(1) Psychoeducation about an approach to gratitude and awareness of positive aspects. (2) Group activity: Four questions to share in small groups about everyday aspects or preferences that bring us benefits and that often go unnoticed. Later, sharing. (3) Individual activity: Students are given four difficult situations (e.g., stressful, bullying and cyberbullying) to complete with the word “fortunately” in an individual way. In addition, they are asked to write about a personal situation, following the model. Later, sharing. (4) Review and conclusion. (5) For home: Gratitude journal (i.e. write three things every day for which we are	(1) Joint class activity: Students are given a definition of bullying. Then, four sentences are shown for them to decide whether they are true or false in relation to bullying and why. Later, resolution of doubts. (2) Group activity: Eleven behaviours are shown for them to decide which ones would be bullying. Later, sharing and resolution of doubts. (3) Group activity: Four categories are shown for them to indicate in which category they would include each of the eleven behaviours mentioned above. Later, sharing and resolution of doubts.

<p>grateful: first, about classmates/teachers; second, about family/friends; third, about any other aspect of their life).</p>	<p>(4) Joint class activity: Audiovisual material to identify bullying behaviours. Later, sharing. (5) Concluding remarks and reflections.</p>
<p><b>Second session: Objectives</b></p>	
<p>(1) Reflect on, value and appreciate the good deeds that others do for us.</p>	<p>(1) Identify what cyberbullying is and how to recognise it.</p>
<p><b>Second session: Activities</b></p>	
<p>(1) Joint class activity: Comment on and share the gratitude journal. (2) Psychoeducation about value and appreciating positive aspects. (3) Group activity: Audiovisual material about a bullying situation to work through questions on the involved roles, benefit appraisal (i.e. intention-cost-benefits of benefactor) and mental subtraction. Later, sharing. (4) Individual activity: Reflection on benefit appraisal using difficult personal situations. Later, sharing. (5) Review and conclusions. (6) For home: Gratitude journal.</p>	<p>(1) Joint class activity: Audiovisual material to identify cyberbullying. (2) Group activity: Students are asked to discuss what characteristics would be common to bullying and cyberbullying, and which would be unique to cyberbullying. Later, sharing and resolution of doubts. (3) Psychoeducation on the forms of cyberbullying. (4) Joint class activity: Audiovisual material to reflect on the messages we send, anonymity, responsibility and the role of viewers in cyberspace. (5) Concluding remarks and reflections.</p>
<p><b>Third session: Objectives</b></p>	
<p>(1) Importance, benefits and ways to express gratitude.</p>	<p>(1) Identify the involved roles and consequences in (cyber)bullying situations.</p>
<p><b>Third session: Activities</b></p>	
<p>(1) Joint class activity: Comment on and share the gratitude journal. (2) Psychoeducation about gratitude expression. (3) Individual activity: First, students are asked to think about difficult situations or (cyber)bullying behaviours they may have experienced and people who helped them in one way or another and for whom they are grateful. Then they are asked to write a gratitude letter to one of these people. Instructions are given and two testimonies of gratitude letters are read as examples. Later,</p>	<p>(1) Group activity: Audiovisual material to identify the roles involved and consequences in these situations. Later, sharing and resolution of doubts. (2) Psychoeducation on the roles involved and the importance of bystanders. (3) Group activity: Audiovisual material to identify and reflect on the consequences in these situations. Later, sharing and resolution of doubts. (4) Concluding remarks and reflections.</p>

<p>impressions of the experience are shared. Although it is optional, they are encouraged to deliver and read the letter to the addressee during the next week.</p> <p>(4) Review and conclusions. (5) For home: Gratitude journal.</p>	
<b>Fourth session: Objectives</b>	
<p>(1) Summing up and integration.</p>	<p>(1) Importance of considering all those involved and how they can prevent and act in these situations. (2) Summing up.</p>
<b>Fourth session: Activities</b>	
<p>(1) Joint class activity: Comment on and share gratitude journal, and gratitude visit for those who did it. (2) Individual activity: Integrative activity to work on awareness, appreciation and expression of gratitude for the help received in a difficult personal situation of (cyber)bullying. Later, sharing. (3) Summing up, conclusions, tips, encouraging gratitude practice and farewells.</p>	<p>(1) Group activity: Audiovisual material to identify and reflect on the roles involved, especially bully-victim, and the antecedents, behaviours and consequences. (2) Psychoeducation: Predictors and the importance of considering all roles involved to manage these situations. (3) Joint class activity: Audiovisual material to identify and reflect on ways to prevent and manage these situations. Later, sharing. (4) Psychoeducation: Review of tips on prevention/management methods. (5) Summing up, conclusions and farewells.</p>

### ***Analysis plan***

All data in the tables are expressed as the number and percentage of subjects [ $N$  (%)] or the mean and standard deviation ( $SD$ ). The significance of differences in categorical and normal continuous variables was determined using the Chi-square test, Student's  $t$ -test and ANOVA, respectively.

Mixed Factorial ANOVA was performed to indicate the relative effects of explanatory variables (i.e. intervention groups, sex) on the different instruments applied, controlling for additional independent variables and covariates (e.g. pre-test). The post

hoc tests for multiple comparisons were performed using Bonferroni's correction test. Logarithm(10)-transformation for dependent variables was used to ensure statistical assumptions for positive skewed distributions and estimated marginal means [95% confidence intervals (95%)] of dependent variables were expressed after back-transformations. The statistical analyses were carried out using IBM SPSS Statistics version 23 (IBM, Armonk, NY, USA) and a  $p$  value  $< .05$  was considered to be statistically significant.

## Results

### *Mixed Factorial ANOVA*

The impact of the intervention groups and repeated measures was studied in the total sample using Mixed Factorial ANOVA with "groups", "sex" and "age" as between-subjects factors, "pre-test" as covariate and "post-test" or "three-month follow-up" cyberaggression as within-subjects factor. To optimize the statistical analyses, the "age" factor has been dichotomised into two age groups by educational cycles (7-8 grade and 9-10 grade) because the ages only ranged from 11 to 17 years old. The descriptive statistics of the intervention groups in the different measurements are shown in Table 3.

**Table 3.** Descriptive statistics of intervention groups and repeated measures

	Control group		Psychoeducational group		Gratitude group	
	Mean	SD	Mean	SD	Mean	SD
<b>Pre-test</b>	0.078	0.13	0.158	0.367	0.065	0.11
<b>Pre-test</b>	0.084	0.27	0.072	0.25	0.041	0.09
<b>3-month follow-up</b>	0.529	0.139	0.087	0.27	0.025	0.07

The assumption of sphericity has been met in the test of within-subjects effects and the results are shown in Table 4.

**Table 4.** Tests of within-subjects effects

	<i>F</i>	<i>df</i>	<i>p</i>	$\eta^2$
<b>Post-test/3-month follow-up</b>	10.161	2	.002	.021
<b>Post-test/3-month follow-up*group</b>	3.587	4	.007	.015
<b>Post-test/3-month follow-up*sex</b>	0.000	2	1.00	0
<b>Post-test/3-month follow-up*age</b>	1.032	2	.357	.002
<b>Post-test/3-month follow-up*group*sex</b>	1.565	4	.182	.007
<b>Post-test/3-month follow-up*group*age</b>	2.451	4	.072	.009
<b>Post-test/3-month follow-up*sex*age</b>	2.333	2	.098	.005
<b>Post-test/3-month follow-up*group*sex*age</b>	1.306	4	.266	.006

We found significantly differences in post-test/three-month follow-up measures [ $F(2) = 10.161$ ;  $p = .002$ ;  $\eta^2 = .021$ ] and in the interaction with groups [ $F(24) = 3.587$ ;  $p = .007$ ;  $\eta^2 = .015$ ] that shows an effect of groups over the cyberaggression scores. The interactions with sex or age were not significant.

The assumption of homoscedasticity has been met in the test of within-subjects effects and the results are shown in the table 5.

**Table 5.** Tests of between-subjects effects

	<i>F</i>	<i>df</i>	<i>p</i>	$\eta^2$
<b>Intercept</b>	94.621	1	< .001	.168
<b>Groups</b>	6.622	2	.001	.027
<b>Sex</b>	0.450	1	.503	.001
<b>Age</b>	0.145	1	.704	0
<b>Group*sex</b>	1.025	2	.360	.004
<b>Group*age</b>	1.008	2	.366	.004
<b>Sex*age</b>	0.567	1	.452	.001
<b>Group*sex*age</b>	1.017	2	.362	.004

We found significant differences in between-factor groups [ $F(2) = 6.622$ ;  $p = .001$ ;  $\eta^2 = .027$ ] but not in the others between-factors variables and the interactions.

The post-hoc analyses showed that a significant reduction in cyberaggression scores was detected in the psychoeducational group compared to the control group [ $t(480) = -4.75$ ,  $p = .014$ ] in the post-test measure, but not with the gratitude group [ $t(480) = -1.38$ ,  $p = .904$ ].

At the three-month follow-up cyberaggression the post-hoc analyses showed that a significant reduction in cyberaggression scores was detected in the gratitude group compared to the control group [ $t(480) = -4.03$ ,  $p = .002$ ] and with the psychoeducational group [ $t(480) = -6.22$ ,  $p < .001$ ].

## **Discussion**

The purpose of this study was to examine the effectiveness of two brief interventions – a gratitude programme and a psychoeducational programme – to reduce cyberaggression in adolescents. Overall, the results suggest that both programmes can help to prevent cyberaggression, which would be in line with previous studies and interventions to reduce aggressive behaviours (e.g. Camelford & Ebrahim, 2016; Chen et al., 2020; Deng et al., 2019; Polanin et al., 2022). Nevertheless, our findings also suggest differences in the duration and appearance of the positive effects of each programme, which we discuss below.

On the one hand, our results show that a brief psychoeducational programme has significant and immediate effects in reducing and preventing cyberaggression in adolescents. These results confirm and expand previous findings on the contribution that psychoeducation can make to the prevention of these behaviours (e.g. Camelford & Ebrahim, 2016; Sorrentino et al., 2018). This may be because when psychoeducational information is provided in an active way (i.e. allowing discussion and time for

adolescents to express themselves), it makes it easier for adolescents to have the space to express themselves and resolve their doubt on this topic (e.g. Camelford & Ebrahim, 2016). Moreover, this type of intervention can help adolescents to clarify certain behaviours that may be cyberbullying (e.g. when a joke is a joke and when it is not), as well as to promote awareness of the risks, knowledge of the consequences and responsibility for their behaviours in cyberspace (e.g. the messages they write on any social network or in any photo or video they publish; Camelford & Ebrahim, 2016; Sorrentino et al., 2018). Nevertheless, despite the positive effects of psychoeducation, our results suggest that these effects to prevent cyberaggression are limited in time, as they are not found at the three-month follow-up. One possible explanation for this may be the brevity of the psychoeducational programme. Considering what other researchers have pointed out (e.g. Menesini & Salmivalli, 2017), it is possible that longer and more intensive interventions could bring greater and longer lasting benefits. Also, it should be noted that the information learned may be diluted and forgotten over time, as no reminders or further work have been done to re-emphasise these aspects in the months following the end of the programme. Moreover, informing, discussing and learning about cyberbullying and how to prevent/manage these situations does not necessarily imply that adolescents put this knowledge into practice or know how to do so, especially in very stressful or difficult situations. Thus, many programmes have considered the training and improvement of skills or resources to foster responsible use of technologies, to strengthen the role of bystanders in order to avoid perpetuating such behaviours, as well as to favour better social relationships, among others, in addition to psychoeducation (e.g. Menesini & Salmivalli, 2017; Polanin et al., 2022). Therefore, given that cyberbullying is a complex phenomenon, training and developing other protective factors, making reminder sessions and considering the adolescent's

environment (e.g. family and scholar community) could foster or maintain these prevention benefits over time. However, further studies are needed to examine and clarify these aspects (e.g. Gaffney et al., 2019; Polanin et al., 2022).

On the other hand, our findings suggest the first evidence that the implementation of a brief gratitude programme has a significant effect on preventing cyberaggression three months later, but not immediately after its completion. This allows previous findings to be expanded in relation to the practice of gratitude for preventing aggression (e.g. Deng et al., 2019; Lombas et al., 2019). One possible reason for not obtaining positive results after the programme could be the short duration of the gratitude programme in our study (i.e. four weeks). Although Deng et al.'s (2019) five-week intervention helped to decrease the levels of aggression in Chinese prisoners just after intervention, it is possible that to reduce aggressive behaviours in a virtual environment requires a more intense, longer programme to obtain more immediate effects. In addition, the acquisition of awareness and appreciation of the positive aspects requires more time to be practised and integrated into adolescents' daily lives (e.g. Shankland & Rosset, 2017). Considering the theoretical approaches of Algoe (2012) and Fredrickson (1998), gratitude could facilitate broad resources and favour the psychological and social functioning (e.g. empathy, social connectedness or prosocial behaviour) that may help in the prevention of cyberaggression (Camerini et al., 2020; Chen et al., 2020). Nevertheless, promoting or fostering good social relations, for example, is not something that can be achieved immediately. Therefore, a longer or more intense gratitude intervention may be necessary to provide more opportunities to practice the learned gratitude activities, so that these can be incorporated into adolescents' behavioural repertoire and become a habit in their lives (e.g. Bono, Mangan, et al., 2020; Wong et al., 2017), as well as to transfer these personal and social

benefits to behavioural patterns in cyberspace in a short time. In this sense, it seems that the psychoeducational programme offers a more immediate but less lasting effect, whereas in the gratitude programme the effects appear later. Due to the scarcity of gratitude interventions on this issue, further research is necessary to clarify and develop more effective interventions and examine their short- and long-term effects (e.g. Bono, Mangan, et al., 2020).

Finally, there are important theoretical and practical implications that can be derived from these findings. On the one hand, this is the first evidence on the potential benefits that the practice of gratitude has on the prevention of cyberaggression in adolescents, which allows us to deepen our knowledge not only on the role of gratitude as a protective factor but also on the effectiveness of anti-cyberbullying programmes. On the other hand, these findings allow consideration of the benefits and limitations of targeted brief interventions (e.g. information about cyberbullying or the practice of gratitude). Although more research is needed to clarify gaps or limitations in this regard (e.g. the duration and intensity of interventions; Gaffney et al., 2019), these results suggest the relevance of considering such interventions. It is especially important to have effective, albeit brief, interventions because there may be limitations in their implementation (e.g. time constraints in educational centres) and it may not always be possible to develop longer and more complex programmes. These results would also encourage future research to further explore these issues and improve the effectiveness of anti-cyberbullying programmes. For instance, considering the beneficial effects found in the two interventions in this study, it is tentative to think that the combination of both interventions could offer greater and longer lasting benefits. Therefore, it would be very interesting for future research to examine the possible effectiveness of a combined programme of psychoeducation and gratitude practice, assessing whether the

two complement each other and produce significant effects straight after the intervention and also whether these effects are maintained over time.

### ***Strengths and limitations***

This study has several strengths, although in view of the generalisability of these findings and future research there are some limitations. Firstly, with regard to the sample characteristics, sample size was considerable and an attempt has been made to overcome some of the limitations present in Sorrentino et al.'s (2018) study (i.e. that students from different experimental conditions could talk to each other and contaminate the results). Therefore, each education centre participated in only one condition in order not to have participants in several experimental conditions at a same centre. However, the sample was from a specific geographical area, so it would be necessary for future studies to corroborate and deepen these findings with more heterogeneous samples.

Moreover, only one self-report instrument has been used to assess cyberaggressive behaviours, so there is a possibility of desirability bias, although this instrument has shown good psychometric properties (Ortega-Ruiz et al., 2016). Future research could consider other assessment measures as a complement (e.g. other informants).

Furthermore, some aspects related to the content and duration of the interventions should be noted. An integrated programme for the development of gratitude, with activities adapted to situations of (cyber)bullying, has been developed to favour a better approach to the practice of gratitude (e.g. Baumsteiger et al., 2019). Likewise, psychoeducation has tried to take into account the limitations present in multi-component programmes (e.g. Menesini & Salmivalli, 2017; Polanin et al., 2022),

as well as in Camelford and Ebrahim's (2016) psychoeducation-only intervention (i.e., their study was performed only with a female population). This allowed better assessment of the contribution of psychoeducation for preventing cyberaggression. Nevertheless, the duration has been short, only four sessions, and further practice of the aspects learnt after participation in the interventions has been left to the will of the participants. As some researchers have pointed out (e.g. Bono, Mangan, et al., 2020; Davis et al., 2016; Lombas et al., 2019), the short duration of the programme is a limitation in knowing the true extent of the impact of this type of intervention. Moreover, as suggested by some researchers, such as Shankland and Rosset (2017), the development of resources such as gratitude requires time for adolescents to develop and incorporate it into their lives. It would be interesting if future studies could examine the effect of this gratitude programme with a longer duration that would allow for continuity and practice in the appreciation of positive aspects. All this would allow corroboration and deeper understanding of the results obtained, helping to improve the effectiveness of anti-cyberbullying programmes.

## **Conclusion**

This study has attempted to deepen the hitherto existing knowledge on the effectiveness of anti-cyberbullying programmes by analysing the effects of two brief interventions. The findings suggest the relevance of the psychoeducational component in bringing immediate benefits in the prevention of cyberbullying. Moreover, this study provides the first evidence of how training and practising gratitude in adolescents can be a potential protective resource that helps them to reduce cyberaggression. Although further research is needed to deepen and expand on these findings, this study suggests the importance of considering these components in improving and developing future anti-cyberbullying interventions.

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## **Declaration of interest statement**

No potential conflict of interest was reported by the authors.

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## **Data availability statement**

The data that support the findings of this study are available from the corresponding author, M.T.C.-N., upon reasonable request.

## **References**

- Algoe, S. B. (2012). Find, Remind, and Bind: The Functions of Gratitude in Everyday Relationships. *Social and Personality Psychology Compass*, 6(6), 455–469.  
<https://doi.org/10.1111/j.1751-9004.2012.00439.x>
- Baumsteiger, R., Mangan, S., Bronk, K. C., & Bono, G. (2019). An integrative intervention for cultivating gratitude among adolescents and young adults. *The Journal of Positive Psychology*, 14(6), 807–819.  
<https://doi.org/10.1080/17439760.2019.1579356>
- Bono, G., Froh, J. J., Disabato, D., Blalock, D., McKnight, P., & Bausert, S. (2019). Gratitude's role in adolescent antisocial and prosocial behavior: A 4-year longitudinal investigation. *The Journal of Positive Psychology*, 14(1), 230–243.

<https://doi.org/10.1080/17439760.2017.1402078>

Bono, G., Mangan, S., Fauteux, M., & Sender, J. (2020). A new approach to gratitude interventions in high schools that supports student wellbeing. *The Journal of Positive Psychology, 15*(5), 657–665.

<https://doi.org/10.1080/17439760.2020.1789712>

Bono, G., Reil, K., & Hescocox, J. (2020). Stress and wellbeing in urban college students in the U.S. during the COVID-19 pandemic: Can grit and gratitude help? *International Journal of Wellbeing, 10*(3), 39–57.

<https://doi.org/10.5502/ijw.v10i3.1331>

Caleon, I. S., Ilham, N. Q. B., Ong, C. L., & Tan, J. P. L. (2019). Cascading Effects of Gratitude: A Sequential Mediation Analysis of Gratitude, Interpersonal Relationships, School Resilience and School Well-being. *Asia-Pacific Education Researcher, 28*(4), 303–312. <https://doi.org/10.1007/s40299-019-00440-w>

Camelford, K. G., & Ebrahim, C. (2016). The Cyberbullying Virus: A Psychoeducational Intervention to Define and Discuss Cyberbullying Among High School Females. *Journal of Creativity in Mental Health, 11*(3–4), 458–468.

<https://doi.org/10.1080/15401383.2016.1183545>

Camerini, A.-L., Marciano, L., Carrara, A., & Schulz, P. J. (2020). Cyberbullying perpetration and victimization among children and adolescents: A systematic review of longitudinal studies. *Telematics and Informatics, 49*, 101362.

<https://doi.org/10.1016/j.tele.2020.101362>

Chen, L., Wang, Y., Yang, H., & Sun, X. (2020). Emotional warmth and cyberbullying perpetration attitudes in college students: Mediation of trait gratitude and empathy. *PLoS ONE, 15*(7), e0235477. <https://doi.org/10.1371/journal.pone.0235477>

Davis, D. E., Choe, E., Meyers, J., Wade, N., Varjas, K., Gifford, A., Quinn, A., Hook,

- J. N., Van Tongeren, D. R., Griffin, B. J., & Worthington Jr., E. L. (2016). Thankful for the little things: A meta-analysis of gratitude interventions. *Journal of Counseling Psychology, 63*(1), 20–31. <https://doi.org/10.1037/cou0000107>
- Declaration of Helsinki. (2013). Ethical Principles for Medical Research Involving Human Subjects. *Journal of the American Medical Association, 310*(20), 2191–2194. <https://doi.org/10.1001/jama.2013.281053>
- Del Rey, R., Casas, J. A., Ortega-Ruiz, R., Schultze-Krumbholz, A., Scheithauer, H., Smith, P., Thompson, F., Barkoukis, V., Tsorbatzoudis, H., Brighi, A., Guarini, A., Pyzalski, J., & Plichta, P. (2015). Structural validation and cross-cultural robustness of the European Cyberbullying Intervention Project Questionnaire. *Computers in Human Behavior, 50*, 141–147. <https://doi.org/10.1016/j.chb.2015.03.065>
- Deng, Y., Xiang, R., Zhu, Y., Li, Y., Yu, S., & Liu, X. (2019). Counting blessings and sharing gratitude in a Chinese prisoner sample: Effects of gratitude-based interventions on subjective well-being and aggression. *The Journal of Positive Psychology, 14*(3), 303–311. <https://doi.org/10.1080/17439760.2018.1460687>
- Deschamps, R., & McNutt, K. (2016). Cyberbullying: What’s the problem? *Canadian Public Administration/Administration Publique Du Canada, 59*(1), 45–71.
- DeWall, C. N., Lambert, N. M., Pond Jr., R. S., Kashdan, T. B., & Fincham, F. D. (2012). A Grateful Heart is a Nonviolent Heart: Cross-Sectional, Experience Sampling, Longitudinal, and Experimental Evidence. *Social Psychological and Personality Science, 3*(2), 232–240. <https://doi.org/http://doi.org/10.1177/1948550611416675>
- Dickens, L. R. (2019). Gratitude Interventions: Meta-analytic Support for Numerous Personal Benefits, with Caveats. In L. E. Van Zyl & S. Rothmann Sr. (Eds.),

*Positive psychological intervention design and protocols for multicultural contexts*  
(pp. 127–148). Springer.

Emmons, R. A., & Stern, R. (2013). Gratitude as a psychotherapeutic intervention.

*Journal of Clinical Psychology, 69*(8), 846–855. <https://doi.org/10.1002/jclp.22020>

Evangelio, C., Rodríguez-González, P., Fernández-Río, J., & González-Villora, S.

(2022). Cyberbullying in elementary and middle school students: A systematic review. *Computers and Education, 176*, 104356.

<https://doi.org/10.1016/j.compedu.2021.104356>

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General*

*Psychology, 2*(3), 300–319.

Froh, J. J., Bono, G., Fan, J., Emmons, R. A., Henderson, K., Harris, C., Leggio, H., &

Wood, A. M. (2014). Nice thinking! An educational intervention that teaches children to think gratefully. *School Psychology Review, 43*(2), 132–152.

<https://doi.org/10.1080/02796015.2014.12087440>

Gaffney, H., Farrington, D. P., Espelage, D. L., & Ttofi, M. M. (2019). Are

cyberbullying intervention and prevention programs effective? A systematic and meta-analytical review. *Aggression and Violent Behavior, 45*, 134–153.

<https://doi.org/10.1016/j.avb.2018.07.002>

García-Vázquez, F. I., Parra-Pérez, L. G., & Valdés-Cuervo, A. A. (2020). The Effects of Forgiveness, Gratitude, and Self-Control on Reactive and Proactive Aggression

in Bullying. *International Journal of Environmental Research and Public Health, 17*(16), 5760. <https://doi.org/10.3390/ijerph17165760>

Jans-Beken, L. (2019). The dialectic dynamics between trait gratitude, subjective well-

being, and psychopathology across 30 weeks. *Counselling Psychology Quarterly, 32*(3–4), 502–515. <https://doi.org/10.1080/09515070.2019.1638228>

- Kong, F., Yang, K., Yan, W., & Li, X. (2021). How Does Trait Gratitude Relate to Subjective Well-Being in Chinese Adolescents? The Mediating Role of Resilience and Social Support. *Journal of Happiness Studies*, 22(4), 1611–1622.  
<https://doi.org/10.1007/s10902-020-00286-w>
- Kowalski, R. M., Carroll, H., & Britt, J. (2022). Finding the silver lining in the COVID-19 crisis. *Journal of Health Psychology*, 27(6), 1507–1514.  
<https://doi.org/10.1177/1359105321999088>
- Kwok, S. Y. C. L., Gu, M., & Cheung, A. (2019). A longitudinal study on the relationship among childhood emotional abuse, gratitude, and suicidal ideation of Chinese adolescents. *Child Abuse and Neglect*, 94, 104031.  
<https://doi.org/10.1016/j.chiabu.2019.104031>
- Lombas, A. S., Jiménez, T. I., Arguís-Rey, R., Hernández-Paniello, S., Valdivia-Salas, S., & Martín-Albo, J. (2019). Impact of the Happy Classrooms Programme on Psychological Well-being, School Aggression, and Classroom Climate. *Mindfulness*, 10(8), 1642–1660. <https://doi.org/10.1007/s12671-019-01132-8>
- McCullough, M. E., Emmons, R. A., & Tsang, J.-A. (2002). The Grateful Disposition: A Conceptual and Empirical Topography. *Journal of Personality and Social Psychology*, 82(1), 112–127. <https://doi.org/10.1037/0022-3514.82.1.112>
- Menesini, E., & Salmivalli, C. (2017). Bullying in schools: the state of knowledge and effective interventions. *Psychology, Health and Medicine*, 22, 240–253.  
<https://doi.org/10.1080/13548506.2017.1279740>
- Mesurado, B., Distefano, M. J., Robiolo, G., & Richaud, M. C. (2019). The Hero program: Development and initial validation of an intervention program to promote prosocial behavior in adolescents. *Journal of Social and Personal Relationships*, 36(8), 2566–2584. <https://doi.org/10.1177/0265407518793224>

Michailidis, G. (2021). Does gratitude affect the expression of aggression and anger in children? *Dialogues in Clinical Neuroscience & Mental Health*, 4(3), 155–166.

<https://doi.org/10.26386/OBRELA.V4I3.153>

O’Connell, B. H., O’Shea, D., & Gallagher, S. (2018). Examining Psychosocial Pathways Underlying Gratitude Interventions: A Randomized Controlled Trial. *Journal of Happiness Studies*, 19(8), 2421–2444. <https://doi.org/10.1007/s10902-017-9931-5>

Oltean, L.-E., Miu, A. C., Șoflău, R., & Szentágotai-Tătar, A. (2022). Tailoring Gratitude Interventions. How and for Whom Do They Work? The Potential Mediating Role of Reward Processing and the Moderating Role of Childhood Adversity and Trait Gratitude. *Journal of Happiness Studies*, 23(6), 3007–3030. <https://doi.org/10.1007/s10902-022-00530-5>

Ortega-Ruiz, R., Del Rey, R., & Casas, J. A. (2016). Evaluar el bullying y el cyberbullying validación española del EBIP-Q y del ECIP-Q [Assessing bullying and cyberbullying: Spanish validation of EBIPQ and ECIPQ]. *Psicología Educativa*, 22(1), 71–79. <https://doi.org/10.1016/j.pse.2016.01.004>

Payne, J. B., Babar, H., Tse, E., & Moyer, A. (2020). The Gratitude Visit: Student Reflections on a Positive Psychology Experiential Learning Exercise. *Journal of Chemical Information and Modeling*, 4(2), 165–175.

<https://doi.org/10.47602/jpsp.v4i2.228>

Polanin, J. R., Espelage, D. L., Grotzinger, J. K., Ingram, K., Michaelson, L., Spinney, E., Valido, A., Sheikh, A. El, Torgal, C., & Robinson, L. (2022). A Systematic Review and Meta-analysis of Interventions to Decrease Cyberbullying Perpetration and Victimization. *Prevention Science*, 23(3), 439–454.

<https://doi.org/10.1007/s11121-021-01259-y>

- Portocarrero, F. F., Gonzalez, K., & Ekema-Agbaw, M. (2020). A meta-analytic review of the relationship between dispositional gratitude and well-being. *Personality and Individual Differences, 164*, 110101. <https://doi.org/10.1016/j.paid.2020.110101>
- Rey, L., Quintana-Orts, C., Mérida-López, S., & Extremera, N. (2019). Being Bullied at School: Gratitude as Potential Protective Factor for Suicide Risk in Adolescents. *Frontiers in Psychology, 10*, 662. <https://doi.org/10.3389/fpsyg.2019.00662>
- Sasaki, E., Jia, L., Lwa, H. Y., & Goh, M. T. (2020). Gratitude inhibits competitive behaviour in threatening interactions. *Cognition and Emotion, 34*(6), 1097–1111. <https://doi.org/10.1080/02699931.2020.1724892>
- Shankland, R., & Rosset, E. (2017). Review of Brief School-Based Positive Psychological Interventions: a Taster for Teachers and Educators. *Educational Psychology Review, 29*(2), 363–392. <https://doi.org/10.1007/s10648-016-9357-3>
- Skrzelinska, J., & Ferreira, J. A. (2022). Gratitude: the state of art. *British Journal of Guidance & Counselling, 50*(2), 290–302. <https://doi.org/10.1080/03069885.2020.1789553>
- Sorrentino, A., Baldry, A. C., & Farrington, D. P. (2018). The efficacy of the tabby improved prevention and intervention program in reducing cyberbullying and cybervictimization among students. *International Journal of Environmental Research and Public Health, 15*(11), 2536. <https://doi.org/10.3390/ijerph15112536>
- Sun, P., Sun, Y., Jiang, H., Jia, R., & Li, Z. (2019). Gratitude and problem behaviors in adolescents: The mediating roles of positive and negative coping styles. *Frontiers in Psychology, 10*, 1547. <https://doi.org/10.3389/fpsyg.2019.01547>
- Viejo, C., & Ortega-Ruiz, R. (2015). Cambios y riesgos asociados a la adolescencia [Risks and changes related to the adolescence]. *Psychology, Society, & Education, 7*(2), 109–118. <https://doi.org/10.25115/psye.v7i2.527>

- Watkins, P. C. (2014). *Gratitude and the Good Life. Toward a Psychology of Appreciation*. Springer. <https://doi.org/10.1007/978-94-007-7253-3>
- Wong, Y. J., McKean Blackwell, N., Goodrich Mitts, N., Gabana, N. T., & Li, Y. (2017). Giving thanks together: A preliminary evaluation of the Gratitude Group Program. *Practice Innovations*, 2(4), 243–257. <https://doi.org/10.1037/pri0000058>
- Wood, A. M., Froh, J. J., & Geraghty, A. W. A. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review*, 30(7), 890–905. <https://doi.org/10.1016/j.cpr.2010.03.005>
- Yang, Y., Kong, X., Guo, Z., & Kou, Y. (2021). Can Self-compassion Promote Gratitude and Prosocial Behavior in Adolescents? A 3-Year Longitudinal Study from China. *Mindfulness*, 12(6), 1377–1386. <https://doi.org/10.1007/s12671-021-01605-9>
- You, S., Lee, J., & Lee, Y. (2022). Relationships between gratitude, social support, and prosocial and problem behaviors. *Current Psychology*, 41(5), 2646–2653. <https://doi.org/10.1007/s12144-020-00775-4>
- Zeng, P., Wang, P., Nie, J., Ouyang, M., & Lei, L. (2020). Gratitude and cyberbullying perpetration: The mediating role of self-compassion and moral disengagement. *Children and Youth Services Review*, 119(59), 105608. <https://doi.org/10.1016/j.chilyouth.2020.105608>