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'Little Hero', a web-based intervention to promote moral values among children: A study of its development and effectiveness

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ABSTRACT

This paper presents a study of the development and effectiveness of a website intervention program called 'Little Hero.' The aims of Study 1 were (1) to investigate whether prosocial behavior changed following the application of the Little Hero program and whether the change was maintained at follow-up and (2) to explore Argentinean children's opinions of the program. The results indicated that prosocial behavior changed following the application of Little Hero, and the change was maintained three months later. Furthermore, the majority of the children included in Study 1 enjoyed participating in Little Hero, and most said that the program benefited them, found it easy to use, and would recommend it to other children. The purpose of Study 2 was to investigate the effectiveness of the Little Hero program in promoting prosociality, cognitive empathy, and positive emotions (gratitude, serenity, and personal satisfaction) among Uruguayan children. The results indicated that the Little Hero participants increased their prosocial behavior, empathy, and serenity. The gratitude levels of the intervention group did not change; however, those of the control group decreased over the three time points. Furthermore, the program was not effective in promoting personal satisfaction.

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KEYWORDS
Online intervention; prosocial behavior; empathy; positive emotions

Introduction

An article published in the *Journal of Moral Education* in 2021 suggested that virtue education in the virtual environment is an ethical challenge in the 21st century. Indeed, the article encouraged educators to discover the potential of digital technologies to foster virtuous behavior (Dennis & Harrison, 2021). The development of a web-based intervention, Little Hero, responded to this challenge; in fact, it was designed to promote prosocial behavior and related moral values (e.g., empathy, gratitude) among children.

The increasing use and ubiquity of digital technologies in all aspects of life have made these tools an essential component in much of the world. The advantages of online interventions mainly concern (1) applications and (2) the adherence of the participants to

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the intervention. Regarding the advantages of applications, although the initial development of an intervention app can be financially costly, the app can be implemented in large populations, amortizing the cost over the long term. In addition, online programs require less training time for implementers. Online interventions are also available anytime without time or space constraints (Rose, 2014). Concerning the advantages of participants' adherence to the intervention, it is possible that digital resources are attractive to children and generate greater enjoyment and adherence (Mesurado, Distefano, et al., 2019). As these technologies become increasingly familiar, it is critical to explore their utility in character development.

This article discusses the importance of prosocial behavior development in late childhood and the factors that promote it. It also describes the theoretical underpinnings that guided the design of the Little Hero program. This article presents two studies describing the implementation of Little Hero in two Latin American countries, Argentina and Uruguay.

Late childhood and the psychosocial importance of prosocial behavior

Promoting social skills, values, and positive behaviors in late childhood may be vital for children's socialization and helping them cope with the demands of social integration both in and outside the school context. Prosocial behavior, which is essential for developing sound human relationships, is defined as voluntary behavior intended to help people (Eisenberg & Fabes, 1998; Eisenberg et al., 2015). Several studies have shown that prosocial behavior develops early, with the first signs appearing at approximately age two, when children can understand the needs of others (Warneken & Tomasello, 2006, 2009).

Prosocial behaviors have psychosocial importance for positive development among children and adolescents. Empirical research shows that the presence of prosocial behavior is associated with significant positive psychosocial correlates in children and adolescents, a more secure self, higher self-esteem, fewer depressive symptoms and less suicidal ideation, better-quality interpersonal relationships, and better adaptation to the school environment (Eisenberg et al., 2006; Jie et al., 2007; Layous et al., 2012; Padilla-Walker & Carlo, 2014). A recent meta-analysis of 134,667 participants, including preadolescents, adolescents, and emerging adults, showed that higher levels of prosociality are related to lower levels of externalizing and internalizing outcomes (Memmott-Elison et al., 2020). Regarding externalizing problems, prosociality is negatively associated with aggression, delinquency, substance use, deviant peer association, and risky sexual behaviors. Regarding internalizing problems, prosociality is negatively associated with depression but not with anxiety (Memmott-Elison et al., 2020).

Performing prosocial behaviors positively impacts development, and observing prosocial behaviors can also have a positive impact. A meta-analysis with regard to the viewing of prosocial media (prosocial behavior carried out in the context of social networks, the internet, videogames, television, etc.) was recently conducted (Coyne et al., 2018). The study included more than 17,000 participants ranging in age from children to adults. This meta-analysis revealed that viewing prosocial media was negatively associated with aggressive behavior, while it was positively associated with empathic concern and prosocial behavior. In addition, prosocial media had a positive impact on prosocial behavior toward strangers but not on in-group prosocial behavior,

such as that toward friends and family members (Coyne et al., 2018). Moreover, prosocial media were associated with low-cost and high-cost prosocial behaviors (Coyne et al., 2018).

Predictors of prosocial behavior in children

Different variables have been identified as predictors of prosocial behaviors, such as parenting (e.g., authoritative and authoritarian parental styles are positively and negatively associated with prosociality, respectively), personality (e.g., social value orientation, guilt-proneness, honesty – humility, agreeableness, and openness are positively associated with prosociality), and different socioemotional variables (Kline et al., 2019; Mesurado et al., 2018; Pang et al., 2022; Thielmann et al., 2020; Wong et al., 2021). Regarding socioemotional variables, several studies have suggested that empathy is one of those most strongly associated with prosocial behavior (Mesurado et al., 2018; Pang et al., 2022).

Diverse definitions of empathy coexist in the scientific literature (Batson, 2009; Cuff et al., 2016). Some definitions emphasize the emotional aspect, and others emphasize the cognitive aspect, while most recognize both facets. According to Eisenberg et al. (2006), empathy is an emotional reaction that arises from understanding another person's emotional state, which is the same or similar to the emotion that a person is experiencing, whether positive or negative. Moreover, Decety and Lamm (2006) defined empathy as the 'ability to experience and understand what others feel without confusion between oneself and others' (p. 1146). One recognizes that the emotion that resonates in himself or herself is another person's emotion, which means there is differentiation between the two agents.

Empathy cognition is the ability to recognize others' emotions and feelings adequately and to understand the meaning and impact of those feelings on others (Hoffman, 2001; Kalisch, 1973; Richaud et al., 2017). Perspective-taking is understood as a cognitive aspect of empathy, which refers to the ability to adopt another's perspectives and point of view (Davis, 1980). In this regard, research with school-age children showed that empathy, via perspective-taking, predicted higher scores for prosocial behavior (Longobardi et al., 2019). Similarly, a previous meta-analysis revealed that cognitive empathy strongly impacted prosocial behavior (Yin & Wang, 2023). Another study of children found that empathy was associated with high levels of prosocial behavior, as assessed by self-reports and behavioral tasks (Taylor et al., 2020).

Positive emotions are another socioemotional variable associated with prosocial behavior, as suggested in many studies of children and adolescents (Aknin et al., 2018; Mesurado & Richaud, 2017). Positive emotions refer to pleasant or pleasurable affective experiences that can manifest through sensations such as life satisfaction, serenity, and gratitude (Fredrickson, 1998; Oros, 2014); empirical evidence has shown that these three specific positive emotions promote prosociality.

According to the World Happiness Report 2023, a positive association between life satisfaction and prosocial behavior (donating money, volunteering, or helping strangers) exists across 152 countries (Helliwell et al., 2023). Moreover, studies that included adolescent samples from collectivistic countries have found that life satisfaction is associated with prosocial behavior in the community (H. Zhang &

Zhao, 2021). Evidence shows that serenity is positively associated with prosocial behaviors among children aged 9 to 13 years (Cuello & Oros, 2014). Similarly, a recent meta-analysis indicated that meditation (i.e., practices that involve focusing the mind on a specific object, thought, or activity to achieve mental clarity, calmness, focus, and serenity) has a substantial association with self-reported assessments of prosociality and prosocial behavior toward known people and has a medium association with other-reported assessments of prosociality and prosocial behavior toward strangers (Donald et al., 2019). Moreover, prosocial intervention programs conducted among adolescents effectively promote serenity (Mesurado et al., 2021).

Gratitude is another strong covariant of prosocial behaviors. In fact, when a person expresses gratitude to someone, the likelihood that the benefactor will perform more prosocial actions or helping behaviors increases. In this vein, a recent cross-sectional study suggested that gratitude is positively associated with adolescents' prosociality (D. Zhang, 2022). A longitudinal effect was also found in adolescents in which gratitude positively impacted prosocial behavior, as measured six and twelve months later (Li et al., 2023). In addition, experimental studies conducted with children indicated similar results, adding that the impact of gratitude on prosociality was driven by fairness motivation (Oguni & Otake, 2022).

Notably, the association between positive emotions and prosociality can be explained by a 'positive feedback loop' (Aknin et al., 2018). Positive emotions generate higher levels of prosocial behavior; that is, they are a precursor of this behavior in children. Likewise, prosocial action increases emotional gratification.

Our study

The scientific literature points out the importance of prosocial behavior from childhood as well as the need for early promotion of this behavior. Many programs have been developed to promote prosociality; however, most entail in-person implementation (Mesurado, Guerra, et al., 2019). However, there is a gap regarding scientific interventions to promote prosocial behavior, particularly through virtual media, which are highly attractive to children. Virtual programs have the advantage of being self-administered, and although they are costly to develop, their implementation has few human and financial resource costs (Mesurado et al., 2021). They are very attractive to young participants because children are familiar with the virtual environment and feel comfortable expressing ideas freely and honestly there. Consequently, the Little Hero online program was designed to promote prosocial behavior and related moral values (e.g., empathy, gratitude) among children.

This paper includes two studies. Study 1 was a pilot study whose purpose was to investigate (1) whether prosocial behavior changed following the application of the Little Hero program and whether the change was maintained at follow-up and (2) the opinions, perceptions of usefulness, and acceptance levels of Little Hero among Argentinean children. The purpose of Study 2 was to investigate the effectiveness of the Little Hero program in promoting prosociality, cognitive empathy (perspective-taking and emotional recognition), and positive emotions (gratitude, serenity, and personal satisfaction) among Uruguayan children.

Argentina and Uruguay were chosen for this study because they share a very similar history and culture. Historically, these two Latin American countries were part of the Viceroyalty of the Río de la Plata during the colonial era, endowing them with a strong common heritage. The relationship between the two countries has historically been close. Both countries were destinations of important European immigration, particularly Spanish and Italian, in the late 19th and early 20th centuries, which significantly influenced their demographics and culture. They have Spanish as their official language and share the 'Rioplatense Spanish' accent.

Argentina and Uruguay share geographic proximity and a common colonial origin, and they have close historical ties, as a result of which their inhabitants have a similar social and cultural profile and maintain close exchanges.

Method

The Institutional Review Board at Universidad Austral [CIE 19–031] approved the study and procedures.

Study 1

Design

A pretest, posttest, and follow-up design with two control variables (gender and age) was used in Study 1. The follow-up evaluation was performed three months after the posttest. Two inclusion criteria were established for participation in the research: the children were between 9 and 11 years old and had not participated in any psychological stimulation program. The data were analyzed anonymously.

Participants and procedure

A priori power analysis was conducted using G*Power 3.1.9.4 to determine the appropriate sample size for the present study. A repeated-measures ANOVA was performed, controlling for two variables (gender and age). A medium effect size ($f = 0.25$) was estimated based on previous studies involving similar interventions. The significance level was set at $\alpha = 0.05$, and a power of 0.95 was targeted. The ANOVA results indicated that a minimum of 44 participants would be required to detect a significant effect, assuming that three measurements were taken for each participant.

The study included 74 Argentinean children between 9 and 11 (M age 9.95; SD = .79; 59.5% female) of middle socioeconomic levels[1] from three Argentinian educational institutions.

A nonprofit foundation that regularly coordinates training for primary schoolteachers organized a free webinar on the benefits of promoting prosociality in children. The team's principal investigator presented the webinar, which provided scientific evidence of the positive impact of prosociality on children's development (Eisenberg et al., 2006; Jie et al., 2007; Layous et al., 2012; Memmott-Elison et al., 2020; Padilla-Walker & Carlo, 2014). At the end of the webinar, the teachers were offered the opportunity for their schools to participate in the Little Hero training program. They were given the principal

investigator's contact information and told to use it if they were interested in having their students participate in the intervention. Authorization from the educational institutions' principals and informed consent from the parents were needed to participate in the program. The principal investigator also said that the teachers involved in the study would receive training on the Little Hero program and that all the scales used to assess the children would be provided in advance.

The teachers at institutions interested in participating in the program received a three-hour training that explained the theoretical foundation of the program and each of the activities involved in Little Hero.

Each educational institution sent a letter to the parents or guardians of their students stating that their children could participate in the intervention program. They were told that participation was anonymous and voluntary, that it would take place during school hours and that teachers from the institution would oversee the implementation accompanied by a psychologist from the research team. The parents or guardians were asked to sign the informed consent form. Subsequently, the option to participate in the program was explained to the children whose parents had provided authorization. The children were told that their participation was voluntary and anonymous and that they could leave the program whenever they wished.

The intervention consisted of seven face-to-face group sessions and an individual interview. The children were organized into groups of 15 or 20 participants. Each child had a computer with internet access to participate in the program and used headphones to listen to the program's instructions. In the first session, the teacher and a psychologist from the research team presented the program to the children and asked them to complete the pretest assessments. The subsequent four sessions were intervention sessions, and in the sixth session, the children completed the posttest. These six sessions were held on a weekly basis. A follow-up evaluation was conducted three months after completion of the posttest (seven sessions). Each session lasted approximately forty-five minutes to one hour. Finally, each child was interviewed and provided his or her opinion of the Little Hero program (eight sessions).

Materials

Little Hero program description

Based on the Hero program designed for adolescents (Mesurado et al., 2018), Little Hero is a brief online program that was created for children aged 9 to 11. The program includes a pretest, four interventions, a posttest, and a follow-up session, each lasting approximately 45 minutes. The program's graphic environment is a forest that includes four 'cottages' or 'stations' that coincide with the four intervention sessions. An Owl, a symbol of wisdom, intelligence, and knowledge in ancient times, welcomes the children to the program and gives them the necessary instructions to carry out the activities (see Figure 1).

The program is self-administered; however, the first instructions on Little Hero (e.g., how to access the web page and log in) are given by a teacher or a psychologist previously trained in its use. Additionally, while the child performs the activities, he or she does so under the supervision of the teacher or psychologist with the intention of resolving questions or possible difficulties with the operation of the program.

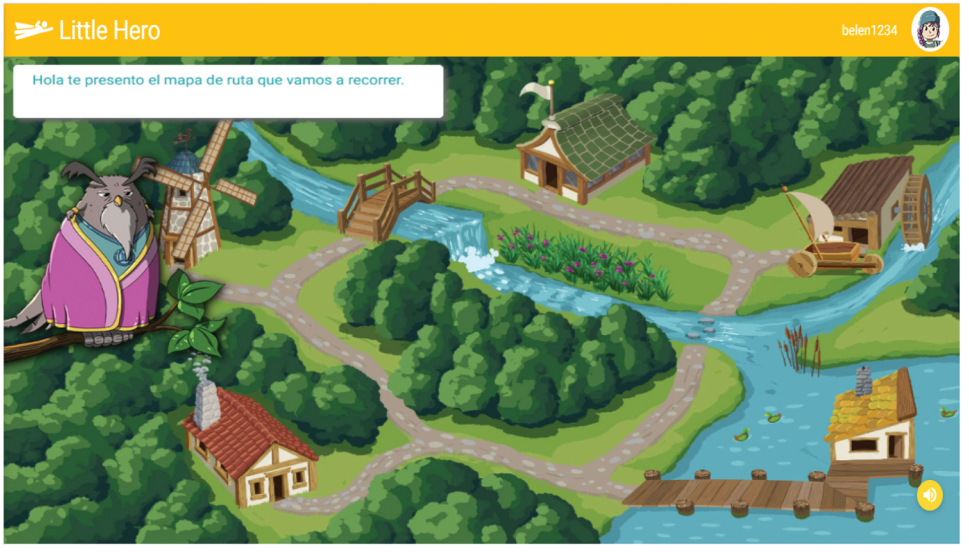

Figure 1. The virtual environment of the Little Hero program.

Figure 2. Avatars to represent children in the Little Hero program.

To access the program, the child must enter a website from an electronic device, either a PC or a smartphone. To do so, he or she must create a username and choose an avatar to represent him or her in the program (see Figures 2 and 3). During the child's first access to the program, he or she receives an explanation from the Owl about the objectives and features of Little Hero. The Owl asks the children to answer a series of questionnaires to complete the baseline assessment or pretest.

Between the second and fifth sessions, four weekly intervention sessions occur. These sessions include empathy, gratitude, positive emotions, and prosocial behavior. Each

Figure 3. More options of avatars to represent children in the Little Hero program.

session has a similar structure, beginning with a brief psychoeducational video followed by a series of activities aimed at promoting socioemotional values. The four psychoeducational videos contained in the program were designed specifically for the intervention. They are a sequence of situations that take place at a campsite among three children (two boys and one girl) who are friends.

The empathy intervention session starts with a video. The story in the first video is about a costume party organized at the camp. Two of the children are wearing the same costume, and the third child arrives and feels left out of the activity. The first two children sense the third child's disappointment and invent a new costume to include all three of them. Finally, the video includes suggestions about how to have empathic attitudes toward others. The second activity consists of another video about the relationship between an old woman and an adolescent who have a discussion because of a misunderstanding. The Owl asks the children different questions about the story to help them reflect on the empathetic aspects of perspective-taking. The third activity included in the empathy session is Acts of Kindness, developed by Lyubomirsky et al. (2005). In this program, the Owl asks the children to select three acts of kindness to perform during the week on a single day (e.g., Wednesday) until the next intervention session. In the next session, the child reports the acts of kindness performed, to whom they were directed and when they took place (Lyubomirsky et al., 2005).

The gratitude intervention session starts with a video about two children at a campsite sleeping in a tent, one of whom is afraid. The second child wakes up and realizes that the first child is afraid, so he helps him overcome the situation and create an atmosphere of gratitude and enjoyment. Finally, the video includes suggestions about how to be grateful to others. The second activity is gratitude messages, which are based on gratitude letters proposed by Seligman et al. (2005). The Owl asks the children to upload pictures and write gratitude messages to their parents, siblings, grandparents, cousins, friends, and teachers. If they do not have siblings, for example, they can skip that message. The third

activity consists of the Owl reading a tale about gratitude to the children and then asking questions about it. Finally, the Owl asks the children to report on the acts of kindness performed during the previous week and suggests that they continue to perform these acts during the next week.

The positive emotions intervention session starts with a video about a girl who wakes up missing her family. One of the boys realizes what the girl is feeling and encourages her to write a letter to her parents to turn her negative emotion into positive emotion. All the children sing a song about positive emotions. The video concludes with suggestions about how to promote positive emotions. Then, there are two activities designed to identify emotions among children and adults. The fourth activity consists of the Owl asking the children to report on the acts of kindness they performed during the previous week and suggesting that they continue to perform them during the next week.

The prosocial behavior intervention session starts with a video about the camp coming to an end, and all the children help dismantle the tents and collect the items they used during their camping days. They collaborate by planting trees and picking up trash. They reflect on the activities they did at the camp and what they learned by sharing and collaborating with others. The video concludes with suggestions about how to help others. The next activity consists of watching a video that presents different helping situations performed by a boy. The Owl asks the children questions about the video, helping them reflect on prosocial actions. Then, a song with an inspirational message is presented, concluding with reflective questions about the song's lyrics. The next activity asks the children to draw graffiti with an inspirational message to the world. Finally, the Owl asks the children to write down three resolutions once they finish the intervention program.

Instruments

Prosocial behavior

We used the Prosocial Behavior Questionnaire. The children scored their prosociality using a 10-item Likert scale that assesses various behaviors, such as their degree of helpfulness, sharing, kindness, and cooperativeness (Caprara & Pastorelli, 1993, Spanish version of Del Barrio et al., 2001). The items were rated on a 4-point scale ranging from 1 (never) to 4 (frequently). Example items from the scale are 'I try to make sad people happier' and 'I help others with their homework'. This instrument provides an overall measure of prosocial behavior. The Cronbach's alpha in the study was .80.

Face-to-face interview

The face-to-face interview included closed- and open-ended questions. Questions developed in previous research were used to evaluate children's opinions about the Little Hero program's acceptance, usefulness, and convenience and whether users would recommend it to others (Baños et al., 2014; Mesurado, Distefano, et al., 2019). The following questions were used: 'Did you enjoy participating in Little Hero?' to measure acceptance; 'Were the program activities beneficial?' to measure usefulness; 'Was it easy to use?' to measure convenience; and 'Would you recommend participating in Little Hero to another child?' to measure recommendation. The participants were presented with two

answers, no and yes. They were also asked why to avoid automatic or inconsistent responses.

An ad hoc interview was designed to evaluate the children's opinions about the activities included in the Little Hero program. The following questions were used: 'Did you enjoy the video included in Little Hero?', 'Did you enjoy the acts of kindness?', 'Did you enjoy writing gratitude messages?', 'Did you enjoy reading the tale included in the program?', 'Did you enjoy identifying emotions?', 'Did you enjoy listening to the song?', 'Did you like making improvement resolutions?', and 'Did you like drawing a graffiti message to the world?' The participants were presented with two answers, no and yes, and we also asked them why to avoid automatic or inconsistent responses.

Finally, we asked the children, 'Did you think Little Hero helped you?' If the answer was 'yes', we asked the following open-ended question: 'How did you think Little Hero helped you?' If the answer was 'no', we asked the following open-ended question: 'Why do you feel that Little Hero did not help you?'

Statistical procedure

The mean and standard deviation of prosocial behavior at the pretest, posttest, and follow-up evaluations were calculated. Repeated-measures ANOVA was used to analyze whether prosocial behavior changed following the Little Hero program and whether the change was maintained at follow-up among Argentinean children. Moreover, gender and age were used as control variables.

Frequency analyses and percentages were used to evaluate the Little Hero program's acceptance, usefulness, and convenience; whether the children would recommend it to others; and the children's opinions about the activities included in the program.

Frequency analyses and percentages were also used to indicate whether the participants thought Little Hero helped. The open-ended questions were as follows: 'How did you think Little Hero helped you?' and 'Why do you feel that Little Hero did not help you?', and the responses were categorized by two independent researchers. When there was disagreement on how to categorize a response, it was discussed until a consensus was reached. Subsequently, the frequency and percentages of the responses were calculated. All the analyses were conducted using SPSS 29.

Results

Changes in prosocial behavior following the Little Hero program

We lost no participants during the implementation of the program. Figure 4 shows the mean and standard deviation for prosocial behavior at the pretest, posttest, and follow-up evaluations. Repeated-measures ANOVA indicated that prosocial behavior changed following the Little Hero program among children [Wilks' Lambda $F(2, 67) = 148.66$, $p < .001$, partial eta squared = .82]. In addition, the interactions of timepoint x gender, timepoint x age, and timepoint x gender x age were not significant [timepoint x gender Wilks' Lambda $F(2, 67) = .79$, $p = .46$; timepoint x age Wilks' Lambda F

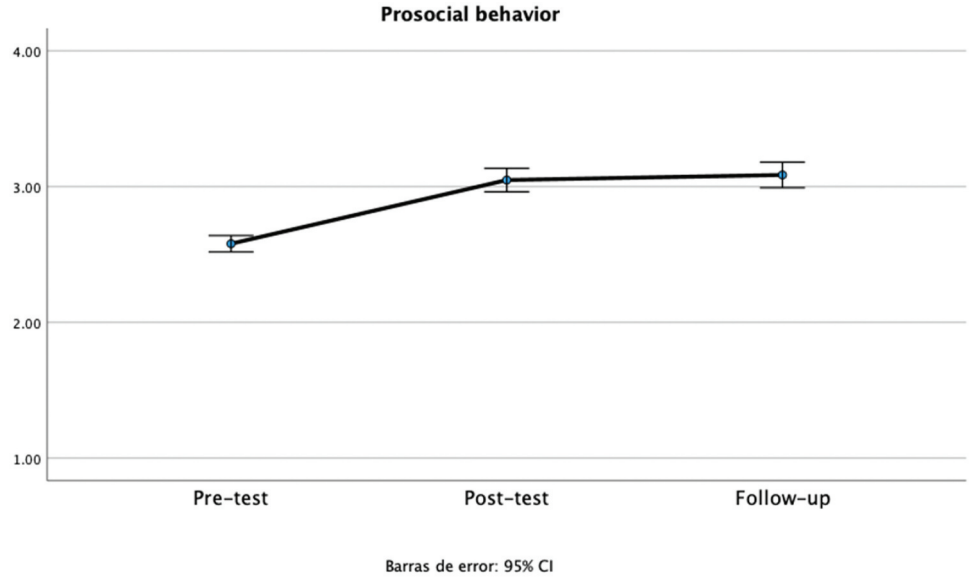

Figure 4. Mean and standard deviation for prosocial behavior at the pretest, posttest, and follow-up evaluations among Argentinean children. Pre-test: $M = 2.59$, SD = .25, Post-test: $M = 3.1$, SD = .36, and Follow-up: $M = 3.1$, SD: .38.

(4, 134) = .35, p =.84, timepoint x gender x age Wilks' Lambda $F(4, 134) = .38$, p = .82].

Finally, we used the Bonferroni test to compare the differences between the posttest and the pretest, between the follow-up and the pretest, and between the follow-up and the posttest. The results indicated statistically significant differences between the posttest and pretest (Bonferroni = .47, $p < .001$, 95% CI = .38, .55) and between the follow-up and pretest (Bonferroni = .51, $p < .001$, 95% CI = .42, .59). No significant differences were found between the follow-up and posttest (Bonferroni = .04, $p = 1.0$, 95% CI = −.07, .14). These results suggest that prosocial behavior changed following the application of Little Hero, and the change was maintained three months later (follow-up evaluation).

Children's opinions of the Little Hero program

The results of the frequency and percentages analyzed to evaluate the Little Hero program's acceptance, usefulness, convenience, and recommendation are summarized in Table 1. The results indicated that 69 out of the 74 children (93%) enjoyed participating in Little Hero, 71 out of the 74 children (95.8%) said that the program benefited them, 73 out of the 74 children (98.6%) said that it was easy to use, and 58 out of the 74 children (77.8%) said that they would recommend it to other children.

The results of the frequency and percentages analyzed for the children's opinion of each activity included in the Little Hero program are also summarized in Table 1. The

Table 1. Argentinean children's opinions of the Little Hero program and its activities are expressed as frequency and percentages.

	No		Yes		Don't know/no answer* Does not remember the activity**	
	f	%	f	%	f	%
Little Hero Program						
Acceptance	3	4.2%	69	93.0%	2	2.8%*
Usefulness	0	0%	73	98.6%	1	1.4%*
Convenience	2	2.8%	71	95.8%	1	1.4%*
Recommendation	11	15.3%	58	77.8%	5	6.9%*
Little Hero's Activities						
Videos	2	2.8%	69	93.0%	3	4.2%**
Acts of kindness	0	0%	68	91.7%	6	8.3%**
Tale	4	5.6%	54	72.2%	16	22.2%**
Identify emotions	1	1.4%	64	86.1%	9	12.5%**
Song	1	15.3%	64	75.0%	9	9.7%**
Improvement resolutions	0	0%	57	76.4%	17	23.6%**
Graffiti message	6	8.3%	47	63.9%	21	27.8%**

children's level of acceptance of the activities was between 63.9% and 93% based on a total sample of 74 children. The activities most highly valued by the children were the videos, the acts of kindness, and identifying emotions, while the least valued activity was drawing graffiti messages. When we explored why the children did not like drawing graffiti messages, they gave answers such as 'I feel that I did not draw that well', 'I struggled to draw in the program', 'I hate drawing', and 'I was not very creative that day.'

Finally, 4 out of the 74 children (5.7%) said that Little Hero did not help them, while 70 children (94.30%) acknowledged that the program helped them. Two independent researchers categorized the open-ended answers to the question, 'Why do you feel that Little Hero did not help you?' or 'How do you think Little Hero helped you?' The children indicated that Little Hero did not help them because either the program was boring or they did not like the activities. In contrast, most of the children acknowledged that the program helped them to be more generous and empathic, to be better people, to reflect, to be more grateful, and to learn to identify their emotions and express them (see Table 2).

Table 2. Argentinean children's opinions on whether Little Hero helped them and how it helped them.

	Frequency	Percentage	Frequency	Percentage
Little Hero, help me:	70	94.20%		
Be more generous			20	28.8%
Be more empathic			14	19.7%
Be a better person			13	18.2%
To reflect			12	16.7%
Be more grateful			6	9.1%
Identified my emotions and express it			5	7.6%
Total			70	100%
Little Hero, not help me:	4	5.7%		
I found the Little Hero program boring			3	75%
I did not like the activities			1	25%
Total	74	100%	4	100%

Study 2

Design

Three elementary schools with 8 classrooms in the Republic of Uruguay were intentionally selected and included in the research. Two inclusion criteria were established for participation in the research: the children were between 9 and 11 years old and were not participating in any psychological stimulation program.

A cluster randomized trial was used to determine inclusion of the classroom in the intervention group or control group waiting list. Cluster randomized trials are a common procedure in educational research. A cluster randomized study is a type of experimental design that involves the randomization of preexisting groups; in our case, the group was the students' classrooms.

The name of each classroom was written on a piece of paper, and then, the classrooms were drawn in such a way that 4 were randomly selected to participate as the intervention group, while the remaining 4 were assigned to the waitlist control group. To ensure randomization, the names of the classrooms were written on identical pieces of paper, which were then placed in a sealed container. The drawing of lots was conducted by the research team in the presence of the authorities responsible for each institution; a person not involved in the study randomly drew the four papers. Cluster randomized trials differ from designs in which individuals are independently randomly assigned to different treatments. The primary reason for conducting a cluster randomized study in educational research is to prevent or minimize contamination bias. If individual randomization within the same class had been used, there would have been a greater risk of students in the intervention group encouraging their peers in the control group to participate in the activities proposed in Little Hero. Another important reason for employing cluster randomized studies is the preexistence of a group, which is beneficial because learning usually occurs in collective settings (Dreyhaupt et al., 2017).

A pretest, posttest, and follow-up design was used. The follow-up evaluation was performed three months after the posttest. Upon completing the follow-up evaluation, children in the waiting list control group were invited to participate in the Little Hero program. The data were analyzed anonymously.

Participants and procedure

The sample size was calculated via the National Institute of Health's calculator for group- or cluster-randomized trials (GRTs). The calculation was based on a type I error rate of 0.05, a desired power of 0.80, an intervention effect size of 0.80, an intracluster correlation coefficient of 0.05, and 25 participants per group. Based on these parameter estimates, the calculator suggested 4 groups per condition. Thus, the total sample size needed for the study was 200 participants.

Figure 5 shows the CONSORT flow diagram of the randomization process for the children in the control and experimental groups. The sample included 106 Uruguayan children in the control group between ages 9 and 11 (M age 10.31; SD = 0.82; 53.8% female) and 123 Uruguayan children in the intervention group between ages 9 and 11 (M age 9.96; SD = 0.81; 48% female) of middle socioeconomic levels.[2]

The children attended three elementary schools with eight classrooms, and the classrooms were randomly assigned to the control or intervention group. The research group

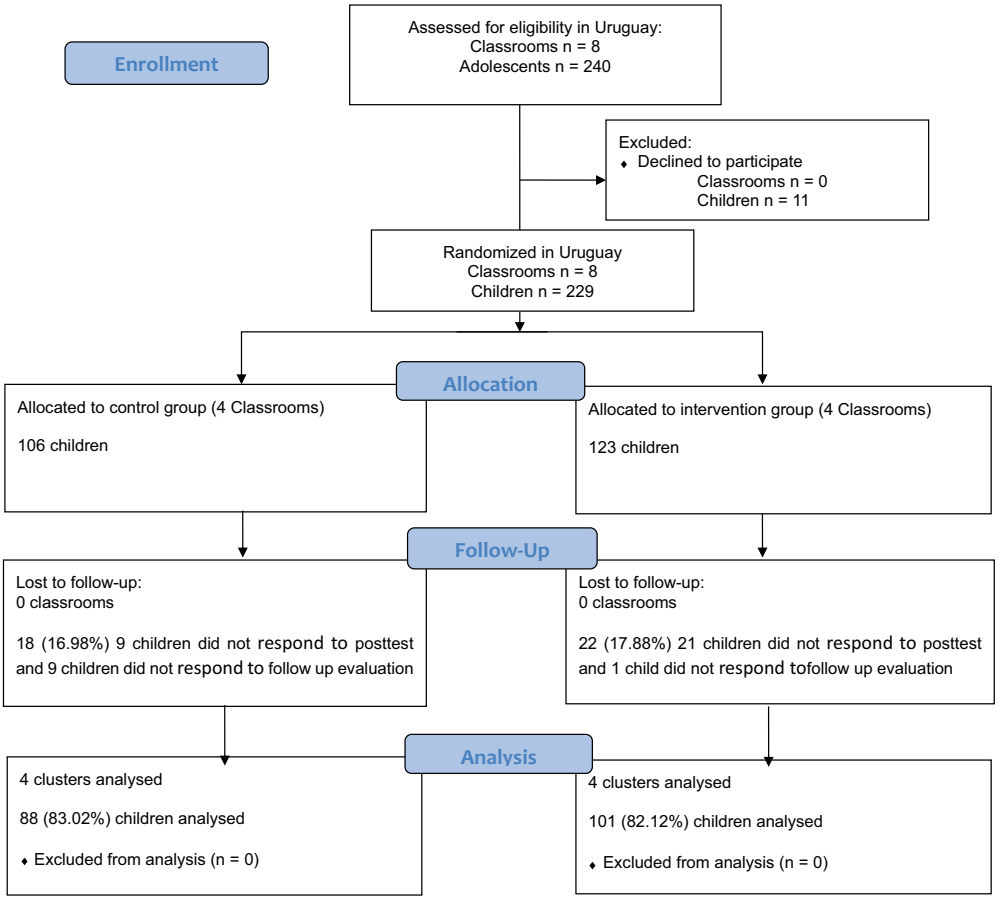

Figure 5. The CONSORT flow diagram of the randomization progress of the Uruguayan children in the control or experimental group.

communicated with the educational institutions' authorities to explain the study's objective. The teachers at the institutions interested in participating in the program received a three-hour training that explained the theoretical foundation supporting the program and each of the activities involved in Little Hero.

The educational institutions sent a letter to the children's parents or caregivers explaining the research project and asked for their authorization for their child to participate in the Little Hero program. The parents or caregivers signed an informed consent form, and the child's consent was also included in the research. The parents or caregivers were informed that participation was anonymous and voluntary, that it would take place during school hours and that teachers from the institution would oversee the implementation accompanied by a psychologist from the research team. The children were told that they could leave the program whenever they wished.

The intervention consisted of seven face-to-face group sessions. The children were organized into groups of 15 or 20 participants simultaneously. Each child had a computer with internet access to participate in the program and used headphones to

listen to the program's instructions. In the first session, the teacher and a psychologist from the research team presented the program to the children and asked them to complete the pretest assessments. The subsequent four sessions were intervention sessions, and in the sixth session, the children completed the posttest. These six sessions were held on a weekly basis. Finally, a follow-up evaluation was conducted three months after the posttest was completed (seven sessions). Each session lasted approximately forty-five minutes to one hour.

Instruments

Prosocial behavior

We used the Prosocial Behavior Questionnaire. The children scored their prosociality using a 10-item Likert scale that assessed various behaviors, such as their degree of helpfulness, sharing, kindness, and cooperativeness (Caprara & Pastorelli, 1993, Spanish version of Del Barrio et al., 2001). The items were rated on a 4-point scale ranging from 1 (never) to 4 (frequently). Example items from the scale are 'I try to make sad people happier' and 'I help others with their homework'. This instrument provides an overall measure of prosocial behavior.

The reliability index obtained in this study for the control group was a Cronbach's alpha of .84, and for the intervention group, it was a Cronbach's alpha of .80.

Cognitive empathy

The Empathy Questionnaire was used to measure the children's empathy (Richaud et al., 2017). This instrument included 15 items on a 4-point scale from 1 (never) to 4 (always) that evaluated emotional recognition, perspective-taking, emotional contagion, emotional regulation, and empathic action. In this study, two cognitive dimensions of empathy were used: emotional recognition (e.g., 'I immediately notice when someone feels bad') and perspective-taking (e.g., 'I find it easy to understand other people's different ways of thinking'). The Cronbach's alphas were .69 for emotional recognition and .70 for perspective-taking in the control group, and .71 for emotional recognition and .70 for perspective-taking in the intervention group.

Positive emotions

The Positive Emotions Questionnaire was used to measure the children's positive emotions (Oros, 2014). This questionnaire evaluates four positive emotions: gratitude (e.g., 'I am grateful to several people for what they do for me'), serenity (e.g., 'I solve my problems with tranquility'), personal satisfaction (e.g., 'I feel I am important'), and sympathy (e.g., 'If I see another person cry, I feel like crying'). The questionnaire includes 23 items on a 3-point scale anchored by 1 (No), 2 (Sometimes) and 3 (Yes). This study used only three dimensions (gratitude, serenity, and personal satisfaction). The Cronbach's alphas were .78 for gratitude, .79 for serenity, and .75 for personal satisfaction for the control group and .79 for gratitude, .78 for serenity, and .76 for satisfaction for the intervention group. The sympathy subscale was not included because a cognitive evaluation of empathy was measured using the Empathy Questionnaire (Richaud et al., 2017).

Statistical procedure

The mean and standard deviation at the pretest, posttest, and follow-up evaluations of prosocial behavior, empathy, and positive emotions were calculated. Repeated-measures ANOVA was used to analyze the effectiveness of the Little Hero program in promoting prosocial behavior among the Uruguayan children. Moreover, gender and age were used as control variables. Repeated-measures MANOVA was used to analyze the effectiveness of the Little Hero program in promoting empathy (emotional recognition and perspective-taking) and positive emotions (gratitude, serenity, and personal satisfaction) among the Uruguayan children, with gender and age used as control variables. All the analyses were conducted using SPSS.

Results

Preliminary analysis

Differences in gender, age, and the pretest evaluation of the variables between the intervention and control groups were analyzed. There were no differences in gender (*Kruskal–Wallis test* =.77, $df = 1$, $p = .38$), initial levels of prosociality (ANOVA $F = .76$, $gl = 1, 227$, $p = .38$), empathy (MANOVA $F = .12$, $gl = 1, 226$, $p = .88$), or positive emotions (MANOVA $F = 2.25$, $gl = 1, 226$, $p = .08$) between the children included in the intervention and control groups. However, the children included in the control group were slightly older than those in the intervention group (mean age of the control group = 10.31, SD = .82; mean age of the intervention group = 9.97, SD = .81; ANOVA $F = 10.15$, $gl = 1, 227$, $p = .002$). Consequently, age was used as a control variable.

The means and standard deviations at the pretest, posttest, and follow-up evaluations of prosocial behavior, empathy, and positive emotions in the control and intervention groups are presented in Table 3.

Table 3. The mean and standard deviation at the pretest, posttest, and follow-up evaluations of prosocial behavior, empathy, and positive emotions of the control and intervention groups among Uruguayan children.

	Control group			Intervention group		
	Pre-test M (SD)	Post-test M (SD)	Follow-up M (SD)	Pre-test M (SD)	Post-test M (SD)	Follow-up M (SD)
Prosocial behavior	2.82 (.64)	2.70 (.67)	2.72 (.68)	2.58 (.46)	3.10 (.60)	3.05 (.69)
Empathy						
Perspective-taking	2.57 (.74)	2.55 (.90)	2.57 (.78)	2.71 (.68)	3.13 (.69)	3.04 (.73)
Emotional recognition	2.84 (.73)	2.74 (.91)	2.66 (.87)	3.01 (.75)	3.32 (.65)	3.17 (75)
Positive emotions						
Gratitude	2.66 (.44)	2.50 (.54)	2.50 (.53)	2.80 (.31)	2.85 (.25)	2.83 (.31)
Serenity	2.24 (.54)	2.20 (.54)	2.26 (.62)	2.32 (.48)	2.48 (.50)	2.53 (.47)
Personal satisfaction	2.36 (.60)	2.26 (.62)	2.25 (.60)	2.50 (.54)	2.57 (.57)	2.47 (.63)

M = mean, SD = Standard deviation.

Effect of the Little Hero program on the promotion of prosociality

Repeated-measures ANOVA was used to analyze the effectiveness of the Little Hero program in promoting prosocial behavior among the Uruguayan children. Two (condition: control and experimental group) x 3 (time: pretest, posttest, and follow-up) ANOVA was used, with gender and age as covariates in the model.

The results indicated a nonsignificant main effect of time (Wilks' Lambda $F = .78$, $df = 2, 223$, $p = .46$), a statistically significant effect of the condition ($F = 6.09$, $df = 1, 224$, $p = .014$, partial eta squared = .03), and a statistically significant effect of the interaction time x condition (Wilks' Lambda $F = 32.28$, $df = 2, 223$, $p \leq .001$, partial eta squared = .23). Finally, the interactions of time x gender (Wilks' Lambda $F = 1.71$, $df = 2, 223$, $p = .18$) and time x age (Wilks' Lambda $F = 1.13$, $df = 2, 223$, $p = .33$) were not statistically significant.

The post hoc test indicated that the intervention group exhibited increased levels of prosocial behavior when the Little Hero intervention ended (posttest vs. pretest = .52, $p \leq .001$, 95% CI = .38, .65), and the effects were stable three months after the end of the intervention (follow-up vs. pretest = .47, $p \leq .001$, 95% CI = .34, .61). In contrast, the prosocial behavior levels of the control group were stable during the three timepoints (posttest vs. pretest = −.11, $p = .22$, 95% CI = −.26, .04; follow-up vs. pretest = −.10, $p = .31$, 95% CI = −.25, .05). See Figure 6.

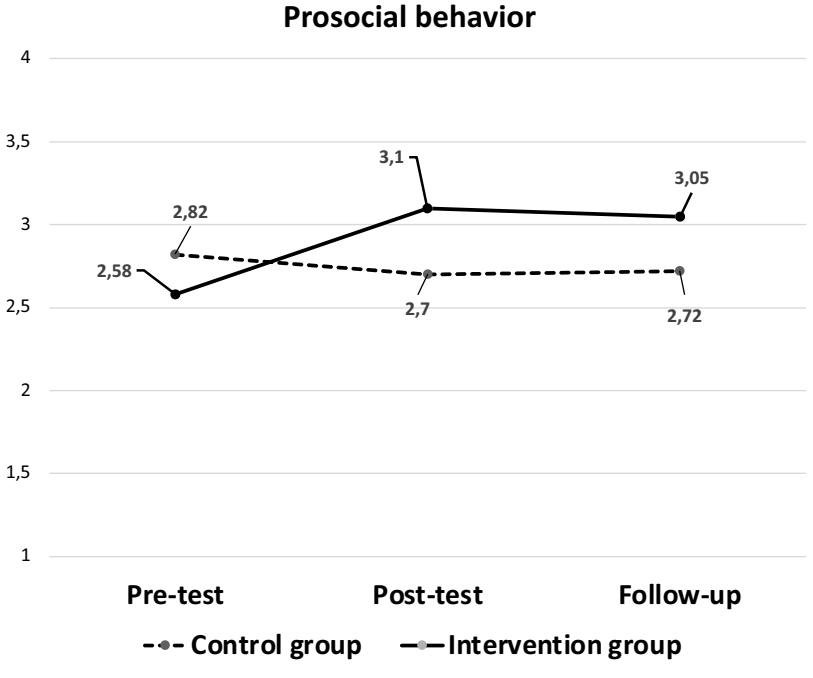

Figure 6. Effectiveness of the Little Hero program in the promotion of prosocial behavior among Uruguayan children. Control group: Pre-test: $M = 2.82$, Post-test: $M = 2.7$, and Follow-up: $M = 2.72$ Intervention group: Pre-test: $M = 2.58$, Post-test: $M = 3.1$, and Follow-up: $M = 3.05$.

Effect of the Little Hero program on the promotion of empathy

Repeated measures MANOVA was used to analyze the effectiveness of the Little Hero program in promoting empathy among the Uruguayan children. A two (condition: control and experimental group) x 3 (time: pretest, posttest, and follow-up) MANOVA was used, with gender and age as covariates in the model.

The overall MANOVA results indicated a nonsignificant main effect of time (Wilks' Lambda $F = 2.04$, $df = 4, 178$, $p = .09$), a statistically significant effect of the condition ($F = 13.86$, $df = 2, 180$, $p \leq .001$, partial eta squared = .13), and a statistically significant effect of the interaction time x condition (Wilks' Lambda $F = 2.81$, $df = 4, 178$, $p = .027$, partial eta squared = .06). Finally, the interactions of time x gender (Wilks' Lambda $F = 1.44$, $df = 4, 178$, $p = .22$) and time x age (Wilks' Lambda $F = 1.28$, $df = 4, 178$, $p = .28$) were not statistically significant.

The univariate analysis for emotional recognition indicated a significant main effect of time ($F = 3.17$, $df = 2, 362$, $p = .043$, partial eta squared = .02), a statistically significant effect of the condition ($F = 24.30$, $df = 1, 181$, $p \leq .001$, partial eta squared = .11), and a statistically significant effect of the interaction time x condition ($F = 4.48$, $df = 2, 362$, $p = .012$, partial eta squared = .02). Finally, the interactions of time x gender ($F = 1.88$, $df = 2, 362$, $p = .15$) and time x age ($F = 2.11$, $df = 2, 362$, $p = .12$) were not statistically significant.

The post hoc test indicated that the intervention group had increased levels of emotional recognition when the Little Hero intervention ended (posttest vs. pretest = .28, $p = .003$, 95% CI = .08, .48); however, the effects were not stable three months after the end of the intervention (follow-up vs. pretest .15, $p = .28$, 95% CI = −.07, .36). In addition, the emotional recognition levels of the control group were stable during the three timepoints (posttest vs. pretest = −.07, $p = 1.00$, 95% CI = −.28, .15; follow-up vs. pretest = −.16, $p = .31$, 95% CI = −.39, .06). See Figure 7.

Moreover, the univariate analysis for perspective taking indicated a significant main effect of time ($F = 3.02$, $df = 2, 362$, $p = .05$, partial eta squared = .02), a statistically significant effect of the condition ($F = 22.99$, $df = 1, 181$, $p \leq .001$, partial eta squared = .11), and a statistically significant effect of the interaction time x condition ($F = 4.54$, $df = 2, 362$, $p = .012$, partial eta squared = .03). Finally, the interactions of time x gender ($F = 2.40$, $df = 2, 362$, $p = .09$) and time x age ($F = 2.11$, $df = 2, 362$, $p = .15$) were not statistically significant.

The post hoc test indicated that the intervention group had increased levels of perspective-taking when the Little Hero intervention ended (posttest vs. pretest = .39, $p \leq .001$, 95% CI = .17, .61), and the effects were stable three months after the end of the intervention (follow-up vs. pretest = .31, $p = .004$, 95% CI = .08, .53). In addition, the perspective-taking levels of the control group were stable during the three timepoints (posttest vs. pretest = .02, $p = 1.00$, 95% CI = −.22, .20; follow-up vs. pretest = .02, $p = 1.00$, 95% CI = −.22, .26). See Figure 8.

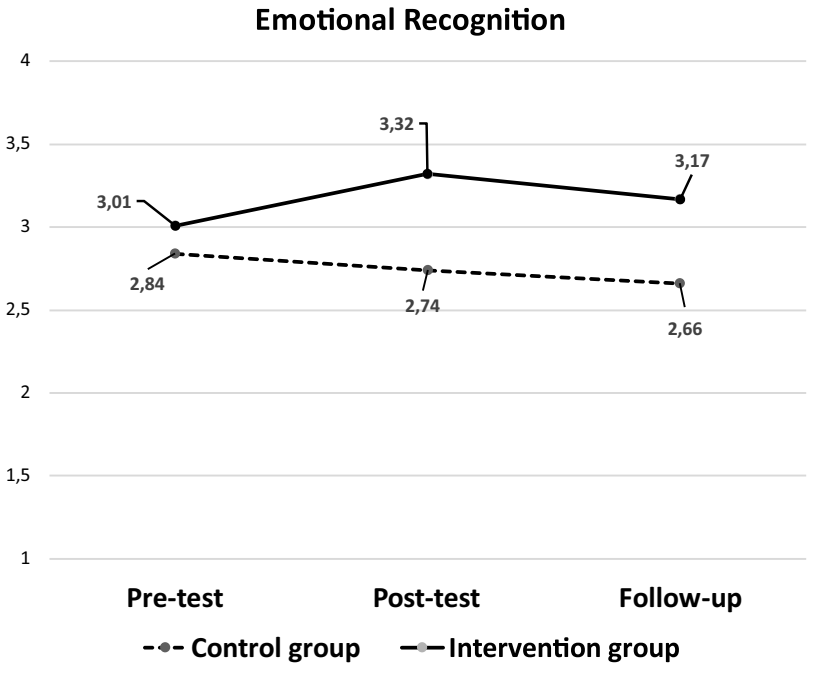

Figure 7. Effectiveness of the Little Hero program in the promotion of emotional recognition among Uruguayan children. Control group: Pre-test: $M = 2.84$, Post-test: $M = 2.74$, and Follow-up: $M = 2.66$ Intervention group: Pre-test: $M = 3.01$, Post-test: $M = 3.32$, and Follow-up: $M = 3.17$.

Effect of the Little Hero program on the promotion of positive emotions

Repeated-measures MANOVA was used to analyze the effectiveness of the Little Hero program in promoting positive emotion among the Uruguayan children. A two (condition: control and experimental group) x 3 (time: pretest, posttest, and follow-up) MANOVA was used, with gender and age as covariates in the model.

The overall MANOVA results indicated a significant main effect of time (Wilks' Lambda $F = 2.24$, $df = 6, 178$, $p = .041$, partial eta squared = .07), a statistically significant effect of the condition ($F = 11.67$, $df = 3, 181$, $p \leq .001$, partial eta squared = .16), and a statistically significant effect of the interaction time x condition (Wilks' Lambda $F = 3.20$, $df = 6, 178$, $p = .005$, partial eta squared = .10). Finally, the interaction of time x gender was nonsignificant (Wilks' Lambda $F = 1.25$, $df = 6, 178$, $p = .29$); however, the interaction of time x age (Wilks' Lambda $F = 2.72$, $df = 6, 178$, $p = .015$, partial eta squared = .08) was statistically significant.

The univariate analysis for gratitude indicated a nonsignificant main effect of time ($F = .68$, $df = 2, 366$, $p = .51$), a statistically significant effect of the condition ($F = 35.24$, $df = 1, 183$, $p \leq .001$, partial eta squared = .16), and a statistically significant effect of the interaction time x condition ($F = 5.49$, $df = 2, 366$, $p = .005$, partial eta squared = .03). Finally, the interactions of time x gender ($F = 2.86$, $df = 2, 366$, $p = .06$) and time x age ($F = .33$, $df = 2, 362$, $p = .72$) were not statistically significant.

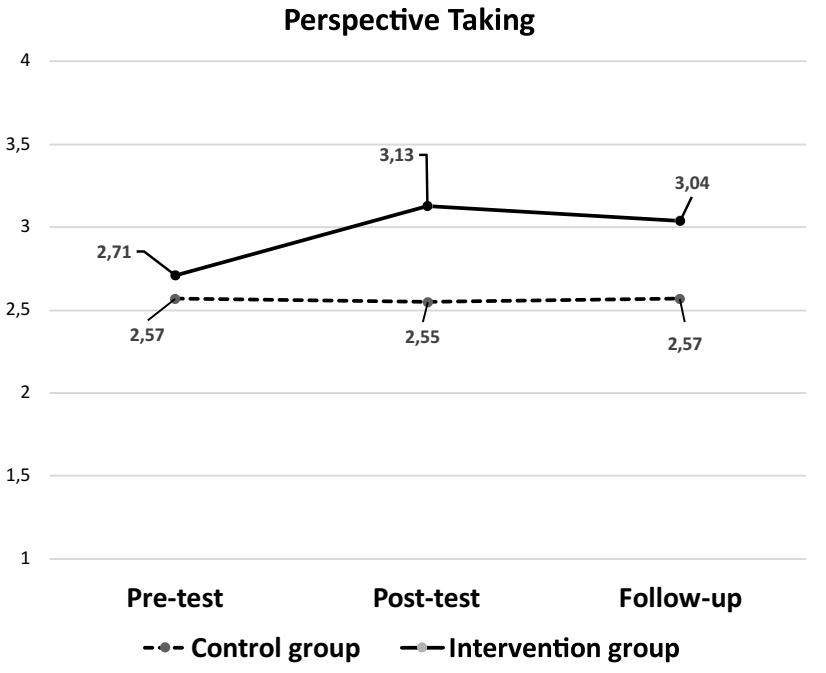

Figure 8. Effectiveness of the Little Hero program in the promotion of perspective-taking among Uruguayan children. Control group: Pre-test: $M = 2.57$, Post-test: $M = 2.55$, and Follow-up: $M = 2.57$ Intervention group: Pre-test: $M = 2.71$, Post-test: $M = 3.13$, and Follow-up: $M = 3.04$.

The post hoc test indicated that the gratitude levels of the intervention group did not change at the three timepoints (posttest vs. pretest = .05, $p = .86$, 95% CI = –.06, .16; follow-up vs. pretest = .02, $p = 1.00$, 95% CI = –.09, .13). However, the gratitude levels of the control group decreased during the three timepoints (posttest vs. pretest = –.16, $p = .004$, 95% CI = –.28, –.04; follow-up vs. pretest = –.14, $p = .011$, 95% CI = –.26, –.03). See Figure 9.

Moreover, the univariate analysis for serenity indicated a nonsignificant main effect of time ($F = .07$, $df = 2, 366$, $p = .93$), a statistically significant effect of the condition ($F = 12.89$, $df = 1, 183$, $p \leq .001$, partial eta squared = .07), and a statistically significant effect of the interaction time x condition ($F = 6.76$, $df = 2, 366$, $p \leq .001$, partial eta squared = .04). Finally, the interactions of time x gender ($F = .95$, $df = 2, 366$, $p = .39$) and time x age ($F = .09$, $df = 2, 366$, $p = .92$) were statistically nonsignificant.

The post hoc test indicated that the intervention group increased the level of serenity when the Little Hero intervention finished (posttest vs. pretest = .17, $p = .006$, 95% CI = .04, .30), and the effects were stable three months after the end of the intervention (follow-up vs. pretest = .22, $p \leq .001$, 95% CI = .09, .35). In addition, the serenity levels of the control group were stable during the three timepoints (posttest vs. pretest =-.04, $p = 1.00$, 95% CI = –.18, .10; follow-up vs. pretest = .89, $p = 1.00$, 95% CI = –.20, .08). See Figure 10.

In addition, the univariate analysis for personal satisfaction indicated a significant main effect of time ($F = 3.94$, $df = 2, 366$, $p = .021$, partial eta squared = .02), a statistically

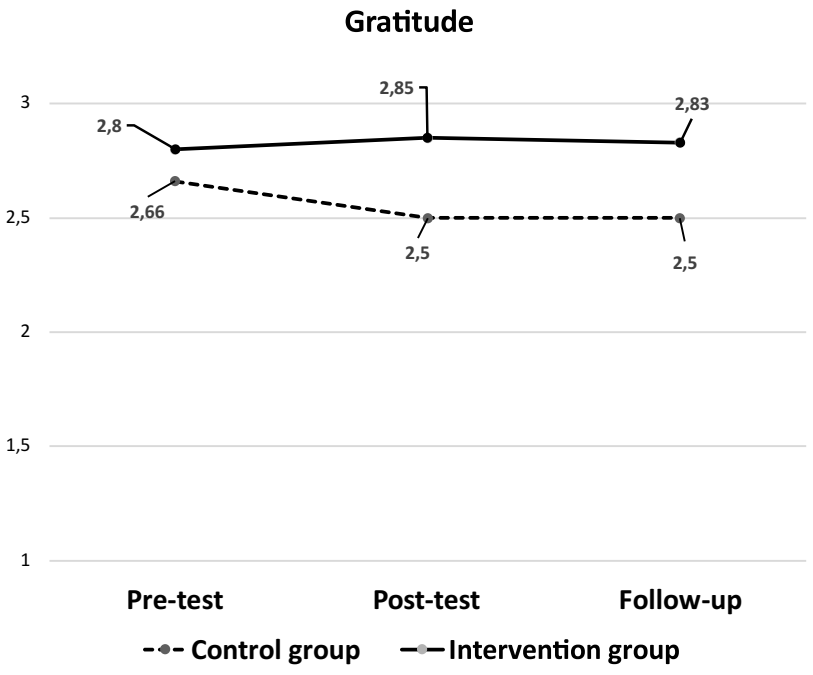

Figure 9. Effectiveness of the Little Hero program in the promotion of gratitude among Uruguayan children. Control group: Pre-test: $M = 2.66$, Post-test: $M = 2.5$, and Follow-up: $M = 2.5$ Intervention group: Pre-test: $M = 2.8$, Post-test: $M = 2.85$, and Follow-up: $M = 2.83$.

significant effect of the condition ($F = 7.93$, $df = 1, 183$, $p = .005$, partial eta squared = .04), and a nonsignificant effect of the interaction time x condition ($F = 2.47$, $df = 2, 366$, $p = .09$). Finally, the interaction of time x gender was nonsignificant ($F = 2.18$, $df = 2, 366$, $p = .11$), and time x age ($F = 5.45$, $df = 2, 366$, $p = .005$, partial eta squared = .03) was statistically significant. See Figure 11.

Discussion

Parents, teachers, and health professionals are well aware of the difficulties children and adolescents face in both school and virtual environments, such as racism, bullying, harassment, cyberbullying, and online humiliation (Dennis & Harrison, 2021). The lack of moral virtues such as prosociality and empathy could be at the root of many children's interpersonal problems. Hence, developing intervention programs and testing whether they are valid and effective tools for fostering moral virtues are essential.

Due to their association with better psychosocial adjustment, prosocial behavior and the development of other prosocial values, such as empathy and positive emotions, are important topics for school-age children. In this sense, their promotion is relevant to improving children's social, emotional, and academic competencies. Many programs have been developed to foster prosociality. Most are face-to-face implementations, although virtual interventions are increasingly being scaled up.

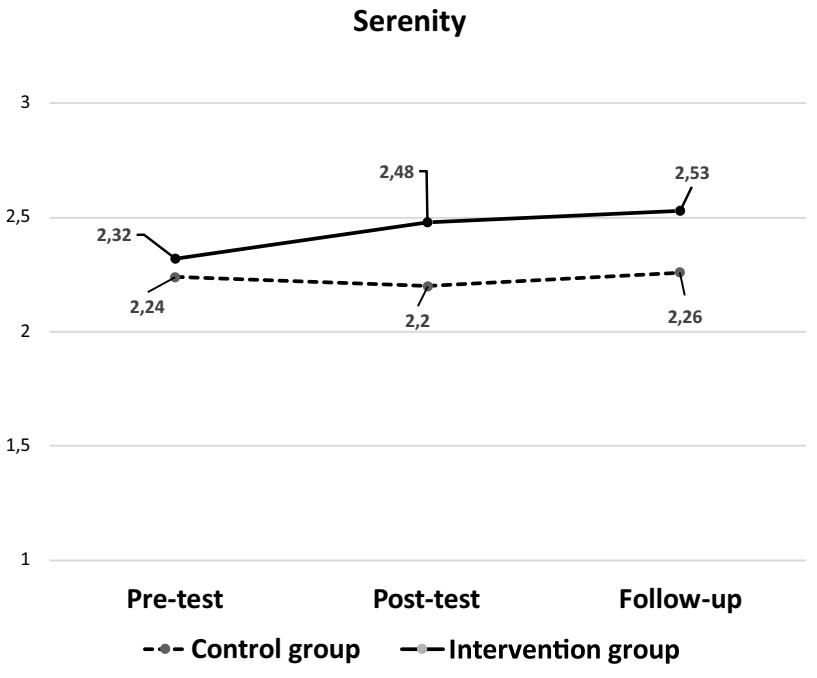

Figure 10. Effectiveness of the Little Hero program in the promotion of serenity among Uruguayan children. Control group: Pre-test: $M = 2.24$, Post-test: $M = 2.2$, and Follow-up: $M = 2.26$ Intervention group: Pre-test: $M = 2.32$, Post-test: $M = 2.48$, and Follow-up: $M = 2.53$.

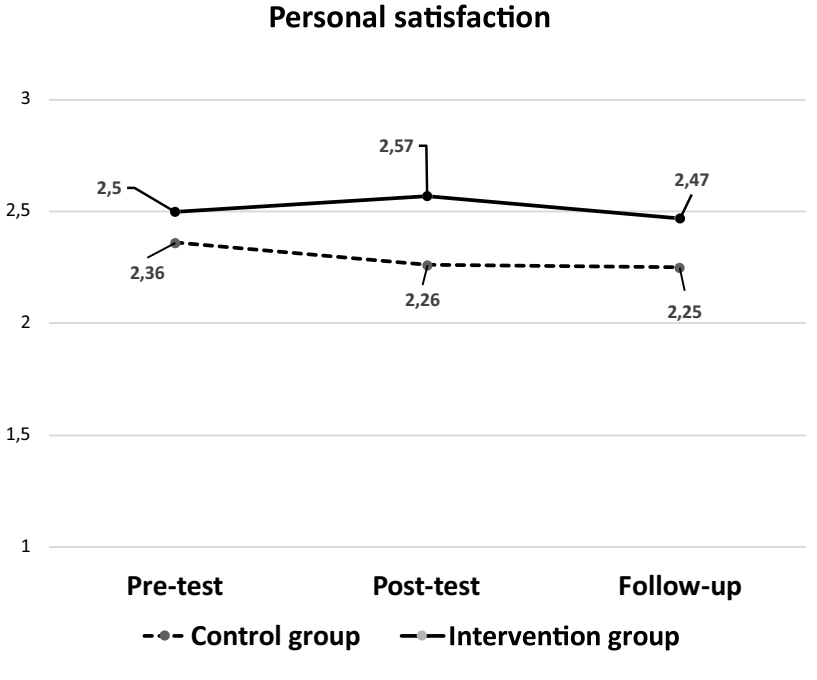

Figure 11. Effectiveness of the Little Hero program in the promotion of personal satisfaction among Uruguayan children. Control group: Pre-test: $M = 2.36$, Post-test: $M = 2.26$, and Follow-up: $M = 2.25$ Intervention group: Pre-test: $M = 2.5$, Post-test: $M = 2.57$, and Follow-up: $M = 2.47$.

The purpose of this paper was to present developed and scientific evidence on the effectiveness of a program called 'Little Hero', which aimed to strengthen prosocial behavior and other prosocial values in two samples of school-age children from Argentina and Uruguay.

Pilot Study 1 showed that prosocial behavior changed following the application of Little Hero, and the change was maintained three months later among the Argentinean children. These results are encouraging since they confirm the ability of short-term intervention programs to achieve stable results over time. In addition, these results highlight the malleability of prosocial behavior in children given that the participants achieved a significant increase in prosocial actions through concrete moral educational actions.

Furthermore, the children in Study 1 reported high levels of perceived usefulness and acceptance of Little Hero. Most children indicated that they liked the program, found it easy to use, found what they learned useful, and would recommend Little Hero to another child. The high percentages of perceived usefulness and acceptance of the Little Hero program were very similar to those reported by Argentinian adolescents about the Hero program (Mesurado, Distefano, et al., 2019), probably due to the playful aspect of the program. These results provide evidence that virtual interventions have a very high acceptance rate among children since they are probably perceived as serious games with which children learn through play. Furthermore, the acceptance of the application may be due to the simplicity of the instructions, the realism of the graphics, the attractiveness of the colors, the characters in the psychoeducational videos, and the wise Owl. These results can also be explained by the fact that in Latin American countries such as Argentina, children present high levels of use of and fascination with new technologies (Facio & Resett, 2012). The children's wide acceptance of the Little Hero program provides evidence that educators have an excellent opportunity to use new technologies to educate children in moral development.

The paper also includes Study 2, in which a cluster randomized trial was used to select participants for inclusion in the intervention group or control group waiting list. A pretest, posttest, and follow-up design was used to study the efficacy of Little Hero in promoting prosociality, cognitive empathy, and some positive emotions among Uruguayan children. The results indicated that the program was effective in promoting prosociality: the intervention group increased their levels of prosocial behavior, while the control group was stable. These results are consistent with previous research among Uruguayan adolescents showing that the virtual Hero program effectively promoted different types of prosocial behaviors, both in-group prosocial behavior (e.g., toward friends and family) and outgroup prosocial behavior (e.g., toward strangers) (Mesurado et al., 2020). Study 2's finding that Little Hero is effective in promoting prosociality is crucial because it shows that the changes produced were not due to a normal evolution of prosociality (the control group's prosociality was stable in the three evaluation measures) but to the direct effect of the intervention's moral education. Moreover, encouraging prosocial behavior through Little Hero during this period of

children's lives is essential because it could help reduce potential interpersonal conflicts with peers, parents, or teachers.

Little Hero also increased the Uruguayan children's perspective-taking and emotional recognition in the intervention group; however, while perspective-taking levels were stable at the follow-up, the program's effect on emotional recognition vanished. Previous studies have shown that the online Hero program effectively promoted perspective-taking among Uruguayan adolescents, although it did not promote emotional recognition (Mesurado et al., 2020).

Finally, Study 2 showed that the Little Hero program effectively promoted the positive emotion of serenity among the Uruguayan children. Indeed, the increase in serenity levels was stable three months after the end of the intervention. However, the serenity levels of the children in the control group remained stable during the three evaluation points. Finally, the Little Hero program did not promote gratitude or personal satisfaction among children in the intervention group. However, notably, the gratitude levels of the children in the intervention group did not change during the three evaluation points, while those of the control group decreased. The Little Hero program may have served to halt the downward trend in gratitude. Given the importance of gratitude in social relationships among children (Carrillo et al., 2023), we think that maintaining gratitude levels in the intervention group may also be a key contribution.

To conclude, this paper is important because it provides empirical evidence that moral education through positive technologies is possible and effective.

Limitations and recommendations for future studies

This research has noteworthy limitations. First, Study 1, which was developed in Argentina, did not include a control group. This limits the results since it is not possible to compare them with natural changes in the prosociality levels of Argentinian children. Furthermore, the sample was selected purposively and not probabilistically; therefore, the results regarding the program's effectiveness are not generalizable to Argentine children. The limitations indicated in Study 1 were addressed in Study 2 using a cluster randomized trial.

Another limitation of Study 1 concerns the wording of the opinion questions asked of the children who participated in the Little Hero program. For example, asking children questions such as 'Did you like the video included in Little Hero?' or 'Did you like the acts of kindness?' might bias them to answer in the affirmative, or the responses might not reflect the participants' true feelings due to the influence of social desirability bias. Children, especially when interacting with adults, may feel compelled to give answers that they believe will meet the adults' expectations, thus biasing the data. A more neutral formulation of the questions might have mitigated this problem, allowing for more genuine responses and reducing the possibility of bias in the results.

In Studies 1 and 2, the dependent variables, such as prosociality, empathy, and positive emotions, were measured through self-reports. Including peer or teacher reports to complement these measures in future studies would be interesting, as was done in similar research (Yao & Wong, 2021).

Finally, other variables not considered in the study, such as personality traits or parenting styles, may moderate the program's effects. Thus, these indicators could be controlled for in future studies.

Conclusion

In summary, although new technologies, such as cell phones and social networks, have given rise to negative behaviors in children, such as cyberbullying (Resett & González Caino, 2019), our results indicate that technologies used for moral education purposes can be beneficial to children's psychosocial development.

In addition, our evidence indicates that Little Hero is a promising program that can be implemented in the school setting and, in the future, other contexts, such as the home or as an adjunct to clinical intervention. The promotion of prosociality, cognitive empathy, and serenity achieved by Little Hero could contribute directly and positively to maintaining and improving social relationships among children. In conclusion, Little Hero fosters key aspects of moral development to help children flourish in life.

Notes

1. The socioeconomic level was estimated by the characteristics of the educational institutions attended by the children, the area of the city where the institutions are located, and the educational levels and occupations of the children's parents.
2. The socioeconomic level was estimated by the characteristics of the educational institutions attended by the children, the area of the city where the institutions are located, and the educational levels and occupations of the children's parents.

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