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Flavia Cirimele [ID][a], Maryluz Gomez Plata [ID][d], Antonio Zuffianò [ID][a], Maria Gerbino[a], Liliana Maria Uribe Tirado[b], Gonzalo Tamayo Giraldo[c], Carmelina Paba Barbosa[d], Beatriz Marin Londoño[b], Mariela Narváez Marín[c], Marcela Ruiz García[b], Eriona Thartori[a], Bernadette Paula Luengo Kanacri[e] and Concetta Pastorelli[a]

[a]Department of Psychology, Sapienza University of Rome, Rome, Italy; [b]Facultad de Psicología, Universidad de San Buenaventura, Medellín, Colombia; [c]Facultad de Ciencias Sociales y Humanas, Universidad de Manizales, Caldas, Colombia; [d]Grupo de investigación Cognición y Educación, Programa de Psicología, Universidad del Magdalena, Santa Marta, Colombia; [e]Escuela de Psicología, Facultad de Ciencias Sociales, Pontificia Universidad Católica de Chile, Santiago, Chile

ABSTRACT

The present study evaluated the efficacy of an Italian school-based intervention programme adapted in three Colombian sites (Medellín, Manizales, and Santa Marta) in promoting prosocial behaviour among adolescents. Using a pre-test-post-test design with a multi-informant approach, the present study assessed 451 students ($M_{age} = 12.77$, $SD = 1.06$) of the intervention group and 428 students ($M_{age} = 12.64$, $SD = 1.01$) by using self-report and peer rating measures of prosocial behaviour. After establishing the measurement invariance across time and informants, a latent difference score model showed the positive effect of the intervention programme in improving prosocial behaviour evaluated by peers (Cohen's $d = .379$) among Colombian adolescents, across all three sites. Implications of the study will be discussed.

Introduction

The study of prosocial behaviour, that is those voluntary actions aimed at benefiting others, such as helping, comforting, donating, and sharing has now a long tradition (see Eisenberg, 2006). The empirical evidence shows the developmental benefits of behaving prosocially in several areas of functioning (e.g. Eisenberg et al., 2006; Hui et al., 2020). For instance, research has highlighted that prosocial youth, compared with their less prosocial peers, have better peer relationships, are more socially accepted, and perform better at school (Caprara et al., 2000; Eisenberg et al., 2006), establish a more secure attachment with peers (Laible, 2007), and are part of more popular cliques (Closson, 2009). Being prosocial has been also associated with lower youths' externalizing and internalizing problems (Memmott-Elison et al., 2020) as well as with high self-esteem (Jacobs et al., 2004; Zuffianò et al., 2014) and well-being (Hui et al., 2020).

The study of prosocial behaviour aligns with the Positive Youth Development perspective (PYD; Lerner et al., 2015), which emphasizes adolescence as a key developmental phase in which youth can reach their potential because of the presence of adolescents' plasticity and the interaction between adolescents' resources (e.g. caring and social competencies) and supportive contexts (e.g. school and community settings). The transition to adolescence, indeed, is a sensitive period that exposes youth to

potential risks; however, likely represents also a sensitive developmental window to strengthen resources and offer behavioural alternatives to risky conducts. In this vein, the school is an important socialization context that provides significant opportunities for adolescents to exercise an active role in their peer group, observe and learn positive behaviours from others, improve their social skills, cultivate prosocial oriented values, and practice related behaviours (Ferrer-Wreder, 2014; January et al., 2011).

Hence, it is not surprising that several school-based intervention programmes developed within the theoretical framework of the PYD and mostly in Western contexts (e.g. Catalano et al., 2004; Ciocanel et al., 2017). However, several scholars have put their efforts into identifying the best practices for the implementation and evaluation of PYD intervention in promoting effective youth development (Tolan, 2016), highlighting the fundamental role of cultural and socio-economic factors (Williams & Deutsch, 2016), as well as methodological factors (Lerner et al., 2016; Yohalem & Wilson-Ahlstrom, 2010). For example, there is now a growing interest in implementing these programs in Low-and Middle-Income Countries (LMICs; e.g. Catalano et al., 2019), which are largely underrepresented in prosocial literature (Armstrong-Carter & Telzer, 2021) and prosocial intervention (e.g. Mesurado et al., 2019; Laguna et al., 2020).

Accordingly, in the present study, we investigated the efficacy of the CEPIDEA intervention originally developed in Italy (see, Caprara et al., 2015) – a universal school-based intervention program designed to promote prosocial behaviour and prosocial related skills among adolescents in three sites of Colombia (Medellín, Manizales, and Santa Marta). Colombia is a LMIC that has experienced a high level of conflict and violence in the past 50 years, negatively affecting an entire generation of Colombian youths (see, UNICEF, 2012).

Moreover, from a methodological perspective, we aimed to integrate the evaluation of the programme's efficacy with the growing attention to the convergence (or discrepancy) across informants to inform future intervention evaluation in contexts with fewer resources (De Los Reyes et al., 2019). Although the efficacy of the CEPIDEA programme with youth living in Medellín has already been reported (Luengo Kanacri et al., 2019), this previous study used an aggregate multi-informant (self-report, teacher report, and peer rating) score of prosocial behaviour (Luengo Kanacri et al., 2019). In the present study, instead, we aimed to take a step forward in evaluating the prosocial intervention by disentangling the effect of the intervention across two main targets of the CEPIDEA programme (i.e. students and their peers).

The CEPIDEA Intervention: program components and cultural adaptation in Colombia

The CEPIDEA programme is a universal school-based intervention grounded in the PYD theory and is designed to promote prosocial behaviour among adolescents. Although the theoretical bases of the CEPIDEA programme have been described elsewhere (see, Caprara et al., 2014, 2015), it is worth highlighting that the CEPIDEA is rooted in a prosocial agency model (Caprara & Steca, 2007), in which prosocial behaviours are promoted by socio-cognitive structures such as self-transcendence values (i.e. universalism and benevolence as general beliefs about priorities in life that guide people's action; Schwartz, 1992) and self-efficacy beliefs (i.e. beliefs in one's capability to organize and execute the courses of action required to produce given attainments; Bandura, 1997) in the emotion and interpersonal domains of functioning.

The CEPIDEA used two kinds of intervention strategies: (a) *prosocial sessions*, delivered by the projects' research staff, in collaboration with teachers and aimed at setting the conditions for experiencing and reflecting upon the different prosocial skills, and (b) *prosocial lessons*, delivered by teachers in their specific academic disciplines (e.g. Science, History, Maths, etc.) and emphasizing the value and the benefits of prosocial behaviour in different life contexts.

Overall, previous findings of the implementation of the CEPIDEA programme on talian adolescents demonstrated a consistent positive effect of the exposure to the CEPIDEA intervention in increasing prosocial behaviour, interpersonal self-efficacy, and academic achievement, and decreasing verbal and physical aggression (Caprara et al., 2014, 2015). Moreover, Luengo Kanacri and

colleagues (2019) have recently conducted a first evaluation of the adapted CEPIDEA intervention programme implemented in Medellín (Colombia) in improving prosocial behaviour. Using an aggregate measure of different informants of prosocial behaviour (self-reports, teacher's ratings, and peer ratings), results indicated that, in Medellín (Colombia), the CEPIDEA programme was effective in fostering prosocial behaviours among those adolescents who had lower initial levels of prosociality (i.e. before the intervention) and who were from low socioeconomic status.

Considering that cultures and societies differ in how emotional and social competencies re defined and processed, by implementing the CEPIDEA programme in Colombia – a non-Western and Latin-American country – special attention was given to the adaptation process that included a deepen consideration of the historical, cultural, and socio-economic background.

In the last decades, Colombia faced many important challenges at the social, political, and economic levels. Colombia has been characterized by prolonged and violent internal conflicts that have heavily permeated families, schools, and community relations (Herbolzheimer, 2016) and affected a great proportion of young citizens (between 10 and 24 years of age; DANE, 2018) as actors and victims of the armed conflict and other forms of violence. In the last years, an important reconciliation process is taking place to terminate the prolonged period of violence and civil war. Although the government, through legislative actions, has established resolute efforts to bring the civil war to end and to guarantee a stable and lasting peace, the reconciliation process should also capture a renovate interest in respecting and accepting others within the living community (Firchow, 2017).

In terms of socioeconomic characteristics, Colombia's territory is divided into six socioeconomic stratum (the first strata is the lowest and the sixth strata is the highest) identified by the government, which differentiates the population based on income, neighbourhood, and house structure. Although this stratification has been beneficial in developing a Colombian subsidized system, empirical evidence demonstrates negative effects in terms of discrimination and segregation across citizens (e.g. Sepúlveda Rico et al., 2014). In our study with Colombian youths from the three sites (Medellín, Manizales, and Santa Marta), the CEPIDEA was implemented in schools belonging to the three lowest strata, which are also those who offer fewer services to their citizens and are more affected by phenomena of violence. Moreover, among the three sites, Santa Marta, compared to Medellín and Manizales, is the city characterized by the highest percentage of the population in the lower stratum (20,7% Santa Marta compared to 7,1% of Manizales and 10,6% of Medellín) and the lowest in the middle stratum (14,4% Santa Marta compared to 30,5% of Medellín and the 45,7% of Manizales), that is the third stratum (see DANE, 2018 for further details).

We reasoned that, in a post-conflict society characterized by such an important socioeconomic inequality, the promotion of prosocial behaviour is an important tool for long-term peacebuilding and to protect youths from the negative effects of contextual stressors and resource limitations (Jessor et al., 1998; Larson & Moses, 2017). Also, prosocial behaviours can facilitate access to learning opportunities beyond the resources available in the immediate environment (Armstrong-Carter et al., 2021), supporting better academic achievement (Caprara et al., 2000; Carlo et al., 2018), and improving peaceful relationships among and successful development of their citizens. Thus, using the school context as an elected environment in promoting actions that have a positive impact on the citizens' positive development (e.g. through changes in values, attitudes, beliefs, and behaviours, the CEPIDEA programme in Colombia included the same Italian sessions and lessons, but a special emphasis has been given to two subcomponents of the original curriculum: (a) the expression of positive emotion that sustains prosocial behaviour in the Colombian context and (b) the interpersonal (i.e. empathic and social) skills that enhance youths' prosocial behaviour strategies to counteract conflictual-violent peer-relations.

The present study

Although the first evaluation of the CEPIDEA programme implemented in Medellín has shown its efficacy in improving prosocial behaviour (of note, our sample is an extension of the Colombian sample examined

by Luengo Kanacri et al., 2019), the recent availability of additional data from eight schools located in two other sites (i.e. the cities of Manizales and Santa Marta) allow us to further extend and deepen the evaluation of the efficacy of the CEPIDEA programme in Colombia in three ways:

(1) We explored whether the expected increase in prosocial behaviour was consistent across two different informants: self and peers. From a theoretical perspective, as noted by De Los Reyes et al. (2015), different informants can offer specific insights into unique aspects of participants' functioning/behaviour that are only evident in a specific context. For instance, whereas self-evaluations of prosocial behaviour may also include more personal, situational specific considerations of one's prosociality (I can behave prosocially only towards specific classmates and in specific moments such as after school), peer ratings likely capture an overall tendency of the student to act prosocially during school-time. Moreover, convergence (or discrepancy) across informants may impact evidence-based practices and the understanding of intervention programmes' efficacy at school (De Los Reyes et al., 2019). In detail, after testing the cross-informant measurement invariance to rule out possible differences in the use of the prosocial behaviour scale between self-report and peer ratings, we checked whether the effect of the CEPIDEA programme was comparable across the two raters.

(2) We evaluated the efficacy of the CEPIDEA programme at the latent level using Structural Equation Modelling (SEM; Kline, 2011). The SEM framework allowed us to model the *true change* (i.e. error-free; Geiser et al., 2010) in prosocial behaviour before and after the intervention while assuming the measurement invariance of the prosocial behaviour scale both longitudinally and across informants.

(3) Although the intervention was implemented followed the same procedure across the three sites (i.e. Medellín, Manizales, and Santa Marta), we explored whether the effect of the CEPIDEA intervention was consistent across the three sites of Colombia to control that possible confounds (e.g. different characteristics of the region in which the intervention was implemented) did not affected the delivery of the intervention.

Finally, since previous studies showed the presence of gender, age, and SES effects on prosocial behaviour (see, Eisenberg, 2006, for a more comprehensive review), and that Colombian adolescents from Medellín with higher SES belonging the intervention group presented a lower change in prosocial behaviour compared to the control group (Luengo Kanacri et al., 2019), we controlled for possible moderating effects of these variables on the change in prosocial behaviour from pre-test to post-test in the intervention schools.

Method

Participants and design

The present study was conducted in twelve middle schools (two classrooms for each school) of three sites of Colombia: Medellín, Manizales, and Santa Marta. Using a randomized control trial (RCT), six schools were assigned to the treatment group and six schools to the control group. The total sample included 879 adolescents (M_{age} = 12.71, SD = 1.03; 55.7% boys) at pre-test (T1) and 856 adolescents (M_{age} = 13.00, SD = 1.05; 55.3% boys) at post-test (six months apart; T2). Specifically, the intervention group included 451 students (M_{age} = 12.77, SD = 1.06; 56.9% boys) at T1 and 444 students (M_{age} = 13.08, SD = 1.07; 56.4% boys) at T2, while the control group included 428 students (M_{age} = 12.64, SD = 1.01; 54.4% boys) at T1, and 412 students (M_{age} = 12.90, SD = 1.01; 54.0% boys) at T2. All students attended seventh grade at the pre-test.

In each site, the sample included students as follow: Medellín included 169 students of the intervention group (M_{age} = 12.87, SD = 1.16; 57.4% boys) and 152 of the control group (M_{age} = 12.68, SD = 1.06; 59.2% boys), Manizales 145 students of the intervention group (M_{age} = 12.80, SD = 1.02;

55.6% boys) and 144 of the control group (M_{age} = 12.68, SD = 0.88; 49.3% boys), and Santa Marta 137 students of the intervention group (M_{age} = 12.62, SD = 0.95; 58.1% boys) and 132 of the control group (M_{age} = 12.57, SD = 1.07; 54.3% boys).

Procedure

The study obtained ethical approval from the local Institutional Review Board of each university involved and was conducted in Colombia for 9 months. Specifically, in the city of Medellín the study was conducted from February to October 2012, and in the cities of Manizales and Santa Marta from February to October 2015. However, the procedure was the same at each site. The first phase of the study was constituted of the previous 2-months of programme adaptation and teacher training, and 1-month of the first assessment of participants (pre-test). During this period, the CEPIDEA programme was presented and received the approval of the School Council. Regarding teacher training, most of the teachers participating at the intervention attended two training sessions (16 hours) and collaborated with the research team to schedule the programme activities. Moreover, the research team offered individual meetings to those teachers who could not take part in the training session, to guarantee fidelity to the intervention. Conversely, teachers belonging to the control schools were invited to attend seminars on prosocial behaviours and positive youth development immediately after the last assessment. In the meantime, parents were informed by letters sent home with students that described the study. These letters contained the parental informed consent that was acquired at the beginning regarding each phase of the programme (pre-test assessment, intervention, and post-test assessment).

Before the implementation of the programme, students of intervention and control school were assessed for the first time point (pre-test). During the next six months, the CEPIDEA programme has been implemented in the intervention schools. In the end, participants of the intervention and control group were assessed at a 6-month post-test. The assessment procedure has been conducted as follows. Three to four members of the research team administered the questionnaires in each classroom during school hours. Researchers described to participants instructions and response scales of the questionnaires. To ensure the privacy and the uniqueness of their responses, participants were asked to fill the questionnaires independently to others.

Finally, intervention adherence was controlled by (a) standardization of weekly prosocial sessions (i.e. classrooms activities performed by the research team in collaboration with the teachers) and prosocial workshops (i.e. conducted by the teachers of all subjects) to guarantee the inclusion of the CEPIDEA goals in the normal curriculum of the school; (b) regular communication with, and ongoing supervision of, teachers; (c) weekly staff meetings and (d) an ad hoc checklist completed by the research team at the end of each activity of the intervention programme.

Measures

Prosocial behaviour

Participants' prosocial behaviour was measured using self-reports and peer ratings scales. To ensure consistency across informants, we only considered the three items that were similar in wording for both self and peer evaluations. *Self-reports prosocial behaviour* was measured by the following three items from the Prosociality scale (Caprara & Pastorelli, 19931993; Pastorelli et al., 1997) that assess the frequency of comforting ('I try to console those who are sad'), sharing ('I share the things that I have with my friends'), and helping ('I help immediately those who are in need'). Each item was rated on a 5-point scale (1 = never/almost never to 5 = often). Omega reliability coefficients were .562, and .732 at T1 and T2, respectively. *Peer ratings prosocial behaviour* was assessed by using the same three items of the self-report version of the prosociality scale worded in the third person, in which each classmate rated their peers on a 5-point scale (1 = never/almost never to 5 = often). Each students'

score was obtained by averaging the evaluations of 35 classmates (on average). Omega reliability coefficients were .926, and .878 at T1 and T2, respectively.

Control variables

Students were asked to report their gender, age, and their parents' educational level as a proxy of Socio-Economic Status (SES) (from 0 = he/she did not have access to the school system, to 5 = the master's degree or higher have been completed)."

Data analytic approach

To investigate our research questions, we used a three-step approach within a Structural Equation Modelling framework (SEM; Asparouhov & Muthén, 2009).

First, to rule out possible biases in the interpretation of the items and/or in the use of the rating scale, we tested the measurement invariance of our three-item scale both across time (pre-test vs post-test) and informants (self-report vs peer-ratings). Following the recommendation of Vandenberg and Lance (2000), we tested the measurement invariance in which is carried out an increasing imposition of constraints on factor loadings and intercepts of the observed variable, as the followed three models: (1) configural invariance, in which the factor loadings (λ) and the intercepts (τ) of the items were freely estimated, (2) metric invariance, in which the factor loadings of the same item (e.g. comforting) were constrained to be equal across time ($\lambda_{comforting}$ at T1 = $\lambda_{comforting}$ at T2) and across informants ($\lambda_{comforting}$ self = $\lambda_{comforting}$ peer); (3) scalar invariance, in which the intercepts of the same item (e.g. comforting) were constrained to be equal across time ($\tau_{comforting}$ at T1 = $\tau_{comforting}$ at T2) and across informant ($\tau_{comforting}$ self = $\tau_{comforting}$ peer). Since our goal was to model true (error-free) mean-level differences, we aimed to establish at least partial scalar invariance (i.e. at least one item, in addition to the marker one, showed scalar invariance; Byrne et al., 1989). To test the plausibility of these constraints, we performed the corrected chi-square difference test ($\Delta\chi^2$) for the nested model (Muthén & Muthén, (1998–2017)) and the changes in CFI (ΔCFI) with a critical level of 0.01 (Cheung & Rensvold, 2002).

Second, we modelled the change at the latent level for both self-reports and peer ratings using a bivariate Latent Difference Score (LDS) analysis (McArdle & Hamagami, 2001). We estimated two second-order factors (for each self-report and peer-ratings measures) that represented the latent difference score from pre-test to post-test in the construct of interest.

Third, we included the effects of the intervention, gender, age, and SES as predictors of both the initial level and the latent change scores of self-report and peer-ratings prosocial behaviour. Importantly, we tested whether the effects of these covariates could be constrained to be equivalent across the initial level and the latent change score of self-report and peer ratings prosocial behaviour, by comparing the chi-square difference ($\Delta\chi^2$) between the constrained versus the unconstrained regression paths.

Moreover, to explore possible differences across sites (Medellín, Manizales, and Santa Marta) on the effect of the intervention in predicting the latent change score in the dependent variable, the latent difference score was regressed on two binary dummy variables, firstly using the highest sample size as a reference group. Subsequently, we also tested the third comparison by using another site as a reference group.

All parameters estimation and missing data dealing were conducted by using the Maximum Likelihood with standard errors robust to non-normality (MLR) estimator in Mplus 8.4 (Muthén & Muthén, (1998–2017)). Considering the sensitivity of chi-square index to sample size, we used the following indicators to evaluate the goodness of fit: Comparative-Fit-Index (CFI) and Tucker-Lewis-Index values greater than 0.90 as indicators of acceptable model fit, and CFI/ TLI >0.95 as indicators of good model fit (Brown, 2015; Kelloway, 1998; Kline, 1998), as well Root-Mean-Square-Error-of-Approximation (RMSEA) with 90% Confidence Interval (CI), and Standardized-Root-Mean-Square-Residual (SRMR) values lower than 0.08 as indicators of moderate model fit and below 0.05 as an indicator of good model fit (Brown, 2015; Iacobucci, 2010).

Results

Measurement Invariance across time and informants

In Table 1 we summarized the fit for each of the three nested models of measurement invariance across time (pre-test vs post-test) and informants (self-report vs peer-rating). Results indicated that partial-scalar invariance was tenable across time and informants as indicated by the ΔCFI criterion that was below 0.01 (see Model 3p, Table 1). In detail, we removed the across informant equality constrain for the intercept of the helping item. Overall, results showed that the use of the prosocial behaviour scale was substantially the same both over time and across self and peer ratings, thereby allowing meaningful comparison of the possible prosocial changes reported by the two informants. The *Mplus* outputs of these models are reported in the Open Science Framework (OSF; see models M1-M3p).

Latent difference score model

As illustrate in Figure 1, in the final bivariate LDS model (see, Table 2), we found a small significant increase in peer-rated prosocial behaviour in the intervention group compared to the control group (Cohen's *d* = .379 [95% CI: .234, .524]). Yet, self-evaluated prosocial behaviour did not show a significant difference between the intervention and control group (Cohen's *d* = −.070 [95% CI: −.214, .074]). The *Mplus* outputs of these models are reported in the OSF (see models M4-M5).

To test whether this discrepancy across informants of the intervention effect was not merely due to sampling variability, we constrained one at a time - the effect of the intervention on (a) the initial level and (b) the rate of change in prosocial behaviour to be equal across self and peer ratings. As attested by the lack of statistical significance in the $\Delta\chi^2$ test, the effect of the intervention on the initial level could be retained to be equal across informants ($\Delta\chi^2(1)$ = .072, *p* = .789), thereby indicating that there were no differences at the pre-test in the evaluation of prosocial behaviour made by both the self-report and peer rating (b = .023, p = .525). The significant increase in the $\Delta\chi^2$ ($\Delta\chi^2(1)$ = 12.035, *p* < .001) for the effect of the intervention on the latent change factor (i.e. Δ), instead, indicated that the effect of the CEPIDEA intervention on the change of prosocial behaviour was not equal across informants. The *Mplus* outputs of these models are reported in the OSF (see models M6-M7).

Moreover, we considered the effect of different covariates on the effect of the intervention on self-report and peer-rating prosocial behaviour. Gender (0 = boys 1 = girls) resulted statistically significant in predicting the latent change score of prosocial behaviour evaluated by both, self and peers due to the intervention (Cohen's *d* = .349 [95% CI: .204 .494] and Cohen's *d* = .529 [95% CI: .382 .675], respectively). Participants' age was not statistically significant in predicting latent change scores in prosocial behaviour evaluated by self and peers (Cohen's *d* = −.035 [95% CI: −.179 .109] and Cohen's *d* = −.052 [95% CI: −.196 .092], respectively). Also, SES was not statistically significant in predicting latent change scores in prosocial behaviour in both self-report (Cohen's *d* = .007 [95% CI: −.137 .150]) and peers (Cohen's *d* = .010 [95% CI: −.134 .153]). The *Mplus* outputs of these models are reported in the OSF (see models M8-M13).

Finally, we also explored whether these covariates moderated the effect of the intervention on the change of prosocial behaviour, by regressing the interaction terms *intervention × gender, intervention × age*, and *intervention × SES* on prosocial behaviour. Results showed that gender, age and SES did not moderate the effect of the intervention on the change rates in prosocial behaviour, neither on the self-report prosocial behaviour (b = −.103, SE = .110, p = .347, b = .093, SE = .053, p = .080, and b = .029, SE = .058, p = .612, respectively), nor on the peer rating prosocial behaviour (b = −.028, *SE* = .059, *p* = .635, b = .026, *SE* = .032, *p* = .426, and b = −.011, *SE* = .038, *p* = .767, respectively). The *Mplus* outputs of these models are reported in the OSF (see models M14-M16).

Table 1. Measurement invariance of prosocial behaviour across time (pre-test vs post-test) and informants (self-report vs peer-rating).

	χ^2	df	scf	p	CFI	TLI	RMSEA (90%CI)	SRMR	MC	$\Delta\chi^2$	Δdf	p	ΔCFI
Prosocial Behaviour													
1. Configural	88.844	42	1.084	<.001	.986	.978	.036 (.025, .046)	.031					
2. Metric: equal factor loadings across time and informants	101.310	48	1.103	<.001	.984	.978	.036 (.026, .045)	.040	2 vs 1	12.490	6	.052	.002
3. Scalar: equal intercept across time and informant	177.548	54	1.090	<.001	.963	.954	.051 (.043, .059)	.047	3 vs 2	82.944	6	<.001	.021
3p. Scalar partial: equal intercept across time and informant	119.675	53	1.098	<.001	.980	.975	.038 (.029, .047)	.039	3p vs 2	18.722	1	.002	.004

Note: The following fit indexes are reported: χ^2 = chi square; df = degrees of freedom; scf = scaling correction factor; p= χ^2 p-value; CFI = Comparative-fit-index; TLI = Tucker-Lewis-index; RMSEA = Root-mean-square-error-of-approximation with 90% confidence intervals (90% CI); SRMR = Standardized-Root-Mean-Square-Residual; MC = model comparison; $\Delta\chi^2$ = chi square difference test; Δdf = degrees of freedom difference; p= $\Delta\chi^2$ p-value; ΔCFI = CFI difference test.
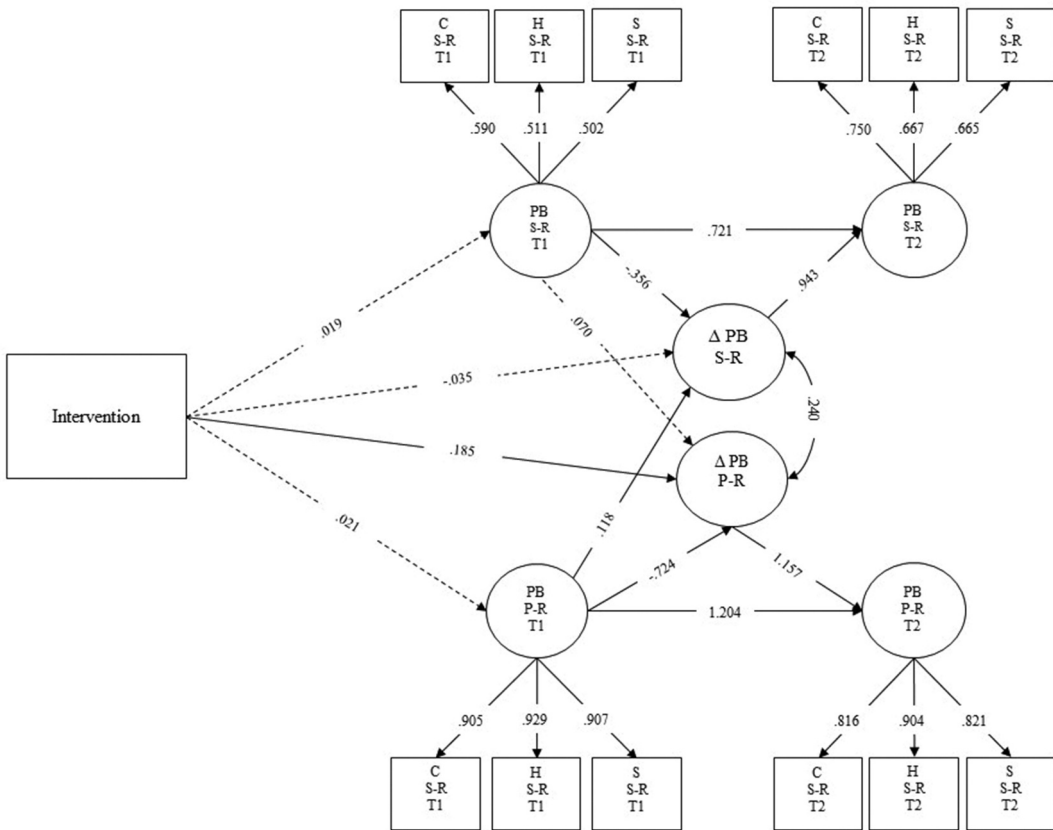
Figure 1. Bivariate latent difference score of the effect of the CEPIDEA intervention on the initial level (T1) and the rate of change (Δ PB) in self-report (S-R) and peer rating (P-R) evaluation of prosocial behaviour (PB).
Note: The effect of participants' gender, age, and SES were included in the present model but not depicted for the sake of simplicity. Standardized (β) regression coefficients are reported. Solid lines represent significant pattern and dotted lines represent not significant patterns. Comforting behaviour item (C); Helping behaviour item (H); Sharing behaviour item (S).

Exploring differences among sites

To explore whether the CEPIDEA intervention was consistent across sites (i.e. Medellín, Manizales, and Santa Marta), we checked for possible interaction effects between intervention and sites. First, using Medellín as the reference group, we regressed the latent change scores of prosocial behaviour (self-report and peer rating) on two dummy-coded variables (i.e. 'Medellín vs Manizales' and 'Medellín vs Santa Marta') as well as on their interaction ('intervention x Medellín vs Manizales' and 'intervention x Medellín vs Santa Marta'). As reported in Table 2, the interaction terms were non-significant, indicating that the positive effect of the CEPIDEA intervention in improving prosocial behaviour did not differ across the three sites. Finally, we repeated the analysis to test the interaction intervention × Manizales vs Santa Marta and it was also non-significant, thereby attesting to the consistency of the CEPIDEA intervention in each site (see, Table 2). The Mplus outputs of these models are reported in the OSF (see models M17–M20).

Discussion

The promotion of prosocial behaviour represents an important goal for youth's positive development (e.g. Eisenberg et al., 2006; Hui et al., 2020). Using a multi-informant approach, the findings of

Table 2. Intervention and covariates effects on pre-test score (T1) of self-report and peer rating prosocial behaviour (PB), and latent difference scores (Δ) of self-report and peer-rating PB.

	Self-report T1 PB			Peer rating T1 PB			Self-report Δ PB			Peer rating Δ PB		
	b (β)	SE	p	b (β)	SE	p	b (β)	SE	p	b (β)	SE	p
1. Intervention	.023 (.019)	.036	.525	.023 (.021)	.036	.525	-.054 (-.035)	.069	.437	.193 (.185)	.030	<.001
2. Pre-Test score self-report PB	-	-	-	-	-	-	-.466 (-.356)	.092	<.001	.062 (.070)	.038	.105
3. Pre-Test score peer rating PB	-	-	-	-	-	-	.168 (.118)	.065	.010	-.696 (-.724)	.033	<.001
4. Gender	.321 (.270)	.037	<.001	.321 (.295)	.037	<.001	.265 (.171)	.035	<.001	.265 (.254)	.035	<.001
5. Age	.003 (.006)	.017	.851	.003 (.006)	.017	.851	-.027 (-.035)	.016	.094	-.027 (-.052)	.016	.094
6. SES	.012 (.023)	.019	.515	.012 (.023)	.019	.515	.005 (.006)	.015	.743	.005 (.010)	.015	.743
7. Gender x Intervention	-.067 (-.047)	.089	.454	-.107 (-.083)	.073	.143	-.103 (-.056)	.110	.347	-.028 (-.022)	.059	.635
8. Age x Intervention	.044 (.481)	.035	.210	.041 (.487)	.035	.241	.093 (.771)	.053	.080	.026 (.315)	.032	.426
9. SES x Intervention	.036 (.042)	.050	.474	-.011 (-.014)	.038	.767	.029 (.026)	.058	.612	-.039 (-.053)	.030	.182
10. Medellín vs Manizales	.022 (.018)	.088	.805	.054 (.047)	.072	.457	-.194 (-.121)	.096	.042	.120 (.110)	.048	.012
11. Medellín vs Santa Marta	-.071 (-.055)	.108	.513	-.202 (-.171)	.079	<.05	-.292 (-.173)	.139	.035	-.071 (-.063)	.059	.225
12. Medellín vs Manizales x Intervention	.150 (.096)	.119	.211	.170 (.119)	.089	.056	.192 (.094)	.141	.175	-.061 (-.063)	.068	.367
13. Medellín vs Santa Marta x Intervention	.212 (.132)	.137	.120	.169 (.114)	.094	.071	.072 (.034)	.202	.722	-.048 (-.034)	.082	.559
14. Manizales vs Medellín	-.042 (-.034)	.087	.630	-.043 (-.038)	.080	.591	.198 (.123)	.096	.038	-.120 (-.110)	.048	.012
15. Manizales vs Santa Marta	-.086 (-.066)	.098	.385	-.258 (-.218)	.048	<.001	-.099 (-.059)	.138	.476	-.191 (-.168)	.046	<.001
16. Manizales vs Medellín x Intervention	-.112 (-.074)	.109	.304	-.189 (-.137)	.105	.072	-.198 (-.101)	.140	.158	.061 (.045)	.067	.368
17. Manizales vs Santa Marta x Intervention	.049 (.030)	.121	.687	.005 (.003)	.069	.941	-.117 (-.056)	.201	.560	.013 (.009)	.068	.842

Note: Unstandardized (b) and Standardized (β) regression coefficient, standard error (SE), and p-value (p) of b are reported. Unstandardized coefficients of covariates across informants were constrained to be equal. Interaction terms of models 7 to 9 were tested and not retained in the final model because they were not statistically significant. Models 10 to 13 represented the exploratory analysis by sites using Medellín as the reference group. Models 14 to 17 represented the exploratory analysis by sites using Manizales as the reference group.

this study showed the efficacy of the adapted CEPIDEA programme in Colombia in increasing peer-reported prosocial behaviour in adolescents from three different sites: Medellín, Manizales, and Santa Marta.

Several considerations should be made to interpret this positive result. This result is consistent with previous findings attesting the efficacy of the CEPIDEA programme in increasing prosocial behaviours in the Italian (Caprara et al., 2014, 2015) and Latin-American samples (Luengo Kanacri et al., 2019). Considering that the CEPIDEA program was developed in Italy and then adapted and implemented in the Colombian context, ascertaining the efficacy of the CEPIDEA across the three sites suggests the appropriateness of the original curriculum framework, as well as the successful adaptation and implementation process in another cultural context. In fact, the CEPIDEA programme in Colombia preserved the original approach (i.e. prosocial sessions that enhancing prosocial skills and prosocial lessons emphasizing prosocial values), and the variations were related only to the content of some group activities and teaching lessons, such as those that focused on conflict resolutions and conciliatory strategies not planned in the original programme. Moreover, the full transition of the original programme took into consideration the following: enhancing collaborative efforts between Italian and Colombian researchers to identify the needs of the local context, taking complete responsibility for all activities related to the implementation and the delivery of the programme in each site, in-site training and coaching of the Italian researchers, and continuous monitoring of the adherence to the programme curriculum.

Despite our result presented a moderate magnitude of the effect (Cohen, 1988), this is in line with the effect size found in a recent meta-analysis by Mesurado et al. (2019) specifically focused on the evaluation of school-based intervention programs stimulating prosocial behaviour, as well as with meta-analytic findings evaluating the efficacy of school-based universal Socio Emotional Learning (SEL) programmes (Durlak et al., 2011).

From a methodological perspective, the present study drew attention to the effect of convergence or discrepancies across informants, by testing separately by self-report and peer rating measures of prosocial behaviour, the efficacy of CEPIDEA intervention in the three Colombian sites. Following De Los Reyes and Ohannessian (2016), we examined the cross-informant measurement invariance of the instrument used to assess prosocial behaviour, to have a proper interpretation of such differences (or unique perspectives), taking into account possible biases in the interpretation and use of the measurement across self and peer evaluation. Although results revealed a difference in the helping behaviour intercept-level between self and peer, following the recommendation of Byrne et al. (1989) we achieved the partial measurement invariance across time (pre-test vs post-test) and informants (self-report vs peer rating) indicating that the interpretation of prosocial behaviour construct was comparable across the self and peer evaluations (see also, Russell et al., 2016). Ascertained the partial measurement invariance allow us to capture a discrepancy across self and peer prosocial behaviour assessment within the CEPIDEA programme. Results of the LDS model, indeed, indicated that only the peer rating captured the positive effect of the CEPIDEA programme on the change from pre-test to post-test of students' level of prosocial behaviour. Considering the unique perspective of each informant was a step forward in respect to the previous evaluation of the CEPIDEA programme that used only one informant (i.e. peer; Caprara et al., 2015) or the often-used combinatorial methods such as the sums of scores used in the first evaluation of the CEPIDEA programme in the sample of Medellín (Luengo Kanacri et al., 2019). Indeed, Fabes and Eisenberg (1998), in their meta-analysis, found that the choice of the rater influenced the magnitude of the relation between the frequencies of prosocial behaviour and age, thereby indicating the relevance of considering informants who are developmentally appropriate in the evaluation of prosocial behaviour.

In the evaluation of a school-based intervention, the measure of students' frequencies in behaving prosocially by an average of 35 classmates seems appropriate since students' classmates may be particularly sensitive in the assessment of participants involved in the intervention programme, detecting valuable information from the actors involved in the environment in which prosocial

behaviours are developed through the programme and manifested (De Los Reyes & Kazdin, 2006 2006). On the other hand, the self-report is also crucial in evaluating the CEPIDEA programme because some moments or situations in which students help and/or comfort someone may not always be visible to other students.

Considering that the CEPIDEA programme is entirely delivered in the school context by offering students the opportunities to behave prosocially, peers are likely more informative because can offer specific insights into unique aspects of participants' prosocial behaviour in the school context (Gresham et al., 2010). From a developmental perspective, indeed, the peer group becomes paramount during adolescence as this latter is characterized by an increase in frequency and intensity of relationships among peers (Rubin et al., 2007) thereby offering more opportunities for prosocial actions. Additionally, the peer groups offer a more in-depth perspective compared to other informants (e.g. caregivers and teachers), because they could be aware of social behaviours (e.g. prosocial behaviour) that adolescents may not want to disclose to their parents/teachers for opportunity reasons (e.g. secrecy, fear of punishment, etc.) or simply because of the reduced time spent with adults' figures during adolescence (e.g. Hardway & Fuligni, 2006). Finally, the peer rating system seems to be particularly important to measure adolescents' prosocial behaviour, due to its potential to capture more information regarding differences and individual changes, since all participants receive a rating (Terry, 2000) and previous studies evidenced its temporal stability (Hansen et al., 1996; Maassen et al., 2005), elements that are important to capture the effects due to the intervention.

Regarding the non-significant effect of the CEPIDEA program when prosocial behaviour was self-reported, our results indicated that both informants did not simultaneously perceive the changes. One possible explanation might be traced to the model of adolescent prosocial behaviour (Wentzel et al., 2007), in which the awareness of one's prosocial behaviour level is influenced by several self-process and contextual cues. The self-perception about one's prosocial behaviour is mediated by internal changes (i.e. values, emotional and social skills, the development of empathy and perspective-taking), as well as acceptance and social approval (i.e. peers). Thus, one may cautiously hypothesize that in a short time (6-months between the pre-test and post-test evaluation), the self-evaluation could be less sensitive in capturing own's change. The social influence on the self-evaluation of prosocial behaviour could be partially seen in our model, in which while the peer evaluation at pre-test had a significant and positive effect on the latent change score of the self-report measure, the peer evaluation is not affected by the self-evaluation at pre-test of prosocial behaviour (see, Table 2).

Finally, regarding the possible influence of gender, age, and socio-economic status (SES), while age and SES did not result significantly in our model, results on the effect of gender on prosocial behaviour are consistent with previous studies attested to the greater tendency of girls than boys in the enactment of prosocial behaviour, also cross-culturally (see, Eisenberg, 2006). Specifically, results indicated that girls present a stronger effect in the improvement of prosocial behaviour than boys. Moreover, regarding the non-significant effect of SES, our results are not in line with the previous evaluation with the sample from Medellín (Luengo Kanacri et al., 2019). It is plausible that this difference may likely depend on the different operationalization of prosocial behaviour between the two studies. In the first study, the authors used an overall multi-informant construct of prosocial behaviour (i.e. self-report, teacher-report, peer ratings). In contrast, in the present study, we strictly focused on the self and peer evaluation of prosocial behaviour separately, selecting the three items formulated in a parallel form across the two informants (i.e. comforting, helping, and sharing).

Limitation and future directions

Despite different strengths, the present study has some limitations that should be taken into consideration. First, considering the pre-test-post-test design, this study could not address the long-term effect of participation in the program; thus, future studies should consider follow-up

measures to ascertain if the positive effects of the CEPIDEA intervention endure over time. Second, although peer evaluation is considered an advantageous method to examine others' behavioural and social competencies in the school context, the present study left open the question of why the self-report measure of prosocial behaviour did not capture the positive effect of the CEPIDEA intervention. Future studies could cover this gap by using retrospective measures or measures that capture individual factors underlying the self-process of own's changes (i.e. empathy and perspective-taking or perceived social competencies; Wentzel et al., 2007).

Third, another limitation of the present study is related to the construct of prosocial behaviour. Although our construct was identified by using the three main subtypes of prosocial behaviour (i.e. helping, comforting, and sharing behaviours; (i.e. comforting, helping, and sharing; see, Dunfield, 2014), a single and broad item was used to assess each subtype. Future studies could integrate results of the present results by using a great number of items assessing each subtype of prosocial behaviour, as well as more specific situations in which the behaviour occurs (e.g. helping others could be decomposed in helping family members, helping friends, helping strangers).

Moreover, despite the robustness of naturalistic observational measures in assessing prosocial behaviour in the school context (e.g. Whitcomb, 2017), the present study did not include observational measures of prosocial behaviour. Thus, future studies could add robustness in assessing prosocial behaviour by using naturalistic observational measures to obtain additional information about the efficacy of intervention programmes stimulating prosocial behaviour.

Finally, an additional limitation of the present study was that we were not able to consider the quality of the process' implementation and evaluation as a possible confounding variable. Difficulties in research resources did not allow us to consistently collect this information across the three intervention sites. However, future studies may pay attention to this aspect, to inform and develop comprehensive implementation strategies in the school setting.

Conclusion

The present study demonstrates the importance to consider the unique perspective of each source of informants in the evaluation of school-based intervention programmes. Moreover, it contributes to ascertain the consistency of the efficacy of the CEPIDEA programme adapted and implemented in Colombia, a non-Western and middle-income country.

The present study provides an instrument for the evaluation of school-based programmes aimed to improve prosocial behaviour because results confirm differences between the two sources of informants used (self-report vs peer rating of prosocial behaviour). Although the moderate effect of the intervention, this study could be informative for a challenge of the Colombian education system, in developing school contexts that contribute to the development of students' social and emotional skills and enables youths to gain standards and respond better to national social and economic goals (OECD, 2019).

Notes on contributors

Flavia Cirimele, Ph.D. Senior Research Fellow at Sapienza University of Rome. Her research interests include individual differences in predicting youths' adjustment, by integrating personality, developmental, and quantitative psychology methods. Specifically, her research topic is the development of prosocial behavior in youths, accounting for familial, school, and cultural factors. She can be reached at: flavia.cirimele@uniroma1.it

Maryluz Gomez Plata, Ph.D. Her research interests focus on socio-cognitive mechanisms involved in moral and human agency and their relationship with risk behaviors across adolescence. She can be reached at: maryluz.gomezplata@uniroma1.it

Antonio Zuffianò, Ph.D. Assistant Professor at the Department of Psychology, Sapienza University of Rome (Italy). His research focuses on the antecedents (e.g., self-efficacy beliefs) and outcomes (e.g., mental well-being, academic achievement) of prosocial development from childhood to young adulthood. He mostly investigates these research questions using latent variable approaches for longitudinal data. He can be reached at: antonio.zuffiano@uniroma1.it

Maria Gerbino, Ph.D. Associate Professor, Department of Psychology, Sapienza University of Rome (Italy). Her research focuses on the relations between personality and youths' adjustment (prosocial behavior, academic achievement) and maladjustment (aggressive behavior and depressive tendencies). She is also involved in the development and evaluation of interventions aimed to promote positive youth development and safer internet use. She can be reached at: maria.gerbino@uniroma1.it

Liliana Maria Uribe Tirado, Ph.D. Research Professor at Facultad de Psicología at the Universidad de San Buenaventura of Medellín (Colombia). Her research interests focus on understanding the role of contextual factors, such as parenting and violence exposure, on children, adolescents, and young adults development. She can be reached at: lilianauribe74@gmail.com

Gonzalo Tamayo Giraldo, Ph.D. in Psychology (Universidad de Flores, Argentina). Professor and Dean of Facultad de Ciencias Sociales y Humanas at the Universidad de Manizales (Colombia), and Director of the Ph.D. Program: "Formación en Diversidad" of the Universidad de Manizales (Colombia). His research interests focus on individual consciousness within the Cognitive-existential theory. He can be reached at: gotamayo@umanizales.edu.co.

Carmelina Paba Barbosa, Ph.D. Professor Emeritus, Faculty of Health Sciences, University of Magdalena (Colombia). She is the Director of the Grupo de investigación Cognición y Educación at the Universidad del Magdalena, Santa Marta, Colombia. Her research interests focus on the relationship between neurocognitive processes and education, as well as on the determinants and promotion of high-ability students. She can be reached at: carmelinapaba@gmail.com

Beatriz Marin Londoño, MA. Dean of the Facultad de Psicología, Universidad de San Buenaventura, Medellín (Colombia). Her interests focus on education and human development with a special emphasis on human resources, human management, and leadership in educational contexts. She can be reached at: decanatura.psico@usbmed.edu.co

Mariela Narváez Marín, MA. Professor Escuela de Psicologia, Facultad de Ciencias Sociales y Humanas at the Universidad de Manizales (Colombia). She is part of the research team "Psicología Clínica y Procesos de Salud" at the Universidad de Manizales (Colombia). Her interests focus on clinical psychology with a special focus on health determinants and intervention. She can be reached at: maye888@gmail.com

Marcela Ruiz García, MA. Research assistant, Facultad de Psicología , Universidad de San Buenaventura of Medellín (Colombia). Her research interests focus on the promotion of prosocial behavior among children and adolescents. She can be reached at: marcelaruizgarcia09@gmail.com

Eriona Thartori, Ph.D. Her main research interests focus on the influence of parents' personality and parenting on child/adolescent's development. Ongoing research is on individual and family characteristics that buffer the negative effects of adverse life events on psychological adjustment over the life course in. She can be reached at: eriona.thartori@uniroma1.it

Bernadette Paula Luengo Kanacri, Ph.D. Associate Professor of Psychology, Pontificia Universidad Católica de Chile (Santiago, Chile). She is also researcher of the Center for Social Conflict and Cohesion Studies where she directs the Public Policy Unit "Evidence, Connection and Impact". Her research focuses on understanding how individual and contextual factors interact over time to explain whether prosocial and civic participation may reduce social disparities and promote social cohesion. She also designs and implements the ProCiviCo school-based intervention to promote active citizenship among youth. She can be reached at: bluengo@uc.cl

Concetta Pastorelli, Ph.D. Full Professor at the Department of Psychology at Sapienza University of Rome (Italy). She is the Director of the Interuniversity Center for the Study of Prosocial and Antisocial Behavior, Sapienza University of Rome. Her research focuses on personality determinants (e.g., self-efficacy beliefs) of prosocial and antisocial behavior, the development of positive parenting practices, and the implementation of school-based intervention programs. She can be reached at: concetta.pastorelli@uniroma1.it

ORCID

Flavia Cirimele 🆔 http://orcid.org/0000-0001-6752-8334
Maryluz Gomez Plata 🆔 http://orcid.org/0000-0002-1520-3236
Antonio Zuffianò 🆔 http://orcid.org/0000-0002-8025-3184

Data Availability Statement

The data and the Mplus outputs that support the findings of this study are openly available in the Open Science Framework (OSF) at https://osf.io/4hcx2/?view_only=5de5288bc9f140dbae8f645e6faad48b.

References

Armstrong-Carter, E., Miller, J., Hill, L., & Domingue, B. 2021. Young children's prosocial behavior protects against academic risk in neighborhoods with low socio-economic status. *Child Development*, *92*(4), 1509–1522 https://doi.org/10.1111/cdev.13549

Armstrong-Carter, E., & Telzer, E. H. (2021). Understanding prosocial development in the context of systemic inequalities in the US and worldwide. *Current Research in Behavioral Sciences*, *2*, 100040. https://doi.org/10.1016/j.crbeha.2021.100040

Asparouhov, T., & Muthén, B. (2009). Exploratory structural equation modeling. *Structural Equation Modeling: a Multidisciplinary Journal*, *16*(3), 397–438. https://doi.org/10.1080/10705510903008204

Bandura, A. (1997). *Self-efficacy: The exercise of control*. Freeman.

Brown, T. A. (2015). *Confirmatory factor analysis for applied research*. Guilford publications.

Byrne, B. M., Shavelson, R. J., & Muthén, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin*, *105*(3), 456–466. https://doi.org/10.1037/0033-2909.105.3.456

Byrne, B. M. , Shavelson, R. J. , Muthén, B.(1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological bulletin*. *105*(3), 456–466. https://doi.org/10.1037/0033-2909.105.3.456

Caprara, G. V., Barbaranelli, C., Pastorelli, C., Bandura, A., & Zimbardo, P. G. (2000). Prosocial foundations of children's academic achievement. *Psychological Science*, *11*(4), 302–306. https://doi.org/10.1111/1467-9280.00260

Caprara, G. V., Kanacri, B. P. L., Gerbino, M., Zuffiano, A., Alessandri, G., Vecchio, G., Caprara, E., Pastorelli, C., & Bridglall, B. (2014). Positive effects of promoting prosocial behavior in early adolescence: Evidence from a school-based intervention. *International Journal of Behavioral Development*, *38*(4), 386–396. https://doi.org/10.1177/0165025414531464

Caprara, G. V., Kanacri, B. P. L., Zuffianò, A., Gerbino, M., & Pastorelli, C. (2015). Why and how to promote adolescents' prosocial behaviors: Direct, mediated and moderated effects of the CEPIDEA school-based program. *Journal of Youth and Adolescence*, *44*(12), 2211–2229. https://doi.org/10.1007/s10964-015-0293-1

Caprara, G. V., & Pastorelli, C. (1993). Early emotional instability, prosocial behaviour, and aggression: Some methodological aspects. *European Journal of Personality*, *7*(1), 19–36.

Caprara, G. V., & Steca, P. (2007). Prosocial agency: The contribution of values and self–efficacy beliefs to prosocial behavior across ages. *Journal of Social and Clinical Psychology*, *26*(2), 218–239. https://doi.org/10.1521/jscp.2007.26.2.218

Carlo, G., White, R. M., Streit, C., Knight, G. P., & Zeiders, K. H. (2018). Longitudinal relations among parenting styles, prosocial behaviors, and academic outcomes in US Mexican adolescents. *Child Development*, *89*(2), 577–592. https://doi.org/10.1111/cdev.12761

Catalano, R. F., Berglund, M. L., Ryan, J. A., Lonczak, H. S., & Hawkins, J. D. (2004). Positive youth development in the United States: research findings on evaluations of positive youth development programs. *The Annals of the American Academy of Political and Social Science*, *591*(1), 98–124. https://doi.org/10.1177/0002716203260102

Catalano, R. F., Skinner, M. L., Alvarado, G., Kapungu, C., Reavley, N., Patton, G. C., Jessee, C., Plaut, D., Moss, C., Bennett, K., Sawyer, S. M., Sebany, M., Sexton, M., Olenik, C., & Petroni, S. (2019). Positive youth development programs in low-and middle-income countries: A conceptual framework and systematic review of efficacy. *Journal of Adolescent Health*, *65*(1), 15–31. https://doi.org/10.1016/j.jadohealth.2019.01.024

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, 9(2), 233–255. https://doi.org/10.1207/S15328007SEM0902_5

Ciocanel, O., Power, K., Eriksen, A., & Gillings, K. (2017). Effectiveness of positive youth development interventions: a meta-analysis of randomized controlled trials. *Journal of Youth and Adolescence*, 46(3), 483–504. https://doi.org/10.1007/s10964-016-0555-6

Closson, L. M. (2009). Aggressive and prosocial behaviors within early adolescent friendship cliques: What's status got to do with it? *Merrill-Palmer Quarterly*, 55(4), 406–435. https://doi.org/10.1353/mpq.0.0035

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Erlbaum.

DANE (2018). *Censo Nacional de Población y Vivienda 2018*. Retrieved May 17, 2021, from https://www.dane.gov.co/index.php/estadisticas-por-tema/demografia-y-poblacion/censo-nacional-de-poblacion-y-vivienda-2018

De Los Reyes, A., Augenstein, T. M., Wang, M., Thomas, S. A., Drabick, D. A., Burgers, D. E., & Rabinowitz, J. (2015). The validity of the multi-informant approach to assessing child and adolescent mental health. *Psychological Bulletin*, 141(4), 858. https://doi.org/10.1037/a0038498

De Los Reyes, A., Cook, C. R., Gresham, F. M., Makol, B. A., & Wang, M. (2019). Informant discrepancies in assessments of psychosocial functioning in school-based services and research: review and directions for future research. *Journal of School Psychology*, 74, 74–89. https://doi.org/10.1016/j.jsp.2019.05.005

De Los Reyes, A., & Kazdin, A. E. (2006). Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. *Psychological Bulletin*, 131(4), 483. https://doi.org/10.1037/0033-2909.131.4.483

De Los Reyes, A., & Kazdin, A. E. (2006). Informant discrepancies in assessing child dysfunction relate to dysfunction within mother-child interactions. *Journal of Child and Family Studies*, 15(5), 643–661. https://doi.org/10.1007/s10826-006-9031-3

De Los Reyes, A., & Ohannessian, C. M. (2016). Introduction to the special issue: discrepancies in adolescent–parent perceptions of the family and adolescent adjustment. *J Youth Adolescence*, 45(10), 1957–1972. https://doi.org/10.1007/s10964-016-0533-z

Dunfield, K. A. (2014). A construct divided: Prosocial behavior as helping, sharing, and comforting subtypes. *Frontiers in Psychology*, 5, 958. https://doi.org/10.3389/fpsyg.2014.00958

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405–432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Eisenberg, N. (2006). Prosocial Behavior. In G. G. Bear & K. M. Minke (Eds.), *Children's needs III: Development, prevention, and intervention* (pp. 313–324). National Association of School Psychologists.

Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2006). Prosocial Development. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (pp. 646–718). John Wiley & Sons, Inc.

Fabes, R. A., & Eisenberg, N. (1998). Meta-analyses of age and sex differences in children's and adolescents' prosocial behavior. *Handbook of Child Psychology*, 3, 1–29.

Ferrer-Wreder, L. (2014). Advancing child and adolescent well-being through positive youth development and prevention programs. *Handbook of Child well-being. Theories, Methods and Policies in Global Perspectives*, 2, 3025–3041. https://doi.org/10.1007/978-90-481-9063-8_164

Firchow, P. (2017). Do reparations repair relationships? Setting the stage for reconciliation in Colombia. *International Journal of Transitional Justice*, 11(2), 315–338. https://doi.org/10.1093/ijtj/ijx010

Geiser, C., Eid, M., Nussbeck, F. W., Courvoisier, D. S., & Cole, D. A. (2010). Analyzing true change in longitudinal multitrait-multimethod studies: Application of a multimethod change model to depression and anxiety in children. *Developmental Psychology*, 46(1), 29. https://doi.org/10.1037/a0017888

Gresham, F. M., Elliott, S. N., & Kettler, R. J. (2010). Base rates of social skills acquisition/performance deficits, strengths, and problem behaviors: an analysis of the social skills improvement system—rating scales. *Psychological Assessment*, 22(4), 809. https://doi.org/10.1037/a0020255

Hansen, D. J., Nangle, D. W., & Ellis, J. T. (1996). Reconsideration of the use of peer sociometrics for evaluating social-skills training: Implications of an idiographic assessment of temporal stability. *Behavior Modification*, 20(3), 281–299. https://doi.org/10.1177/01454455960203003

Hardway, C., & Fuligni, A. J. (2006). Dimensions of family connectedness among adolescents with Mexican, Chinese, and European backgrounds. *Developmental Psychology*, 42(6), 1246–1258. https://doi.org/10.1037/0012-1649.42.6.1246

Herbolzheimer, K. (2016). *Innovations in the Colombian peace process*. NOREF, Norwegian Peacebuilding Resource Centre.

Hui, B. P., Ng, J. C., Berzaghi, E., Cunningham-Amos, L. A., & Kogan, A. (2020). Rewards of kindness? A meta-analysis of the link between prosociality and well-being. *Psychological Bulletin*, 146(12), 1084. http://dx.doi.org/10.1037/bul0000298

Iacobucci, D. (2010). Structural equations modeling: Fit indices, sample size, and advanced topics. *Journal of Consumer Psychology*, 20(1), 90–98. https://doi.org/10.1016/j.jcps.2009.09.003

Jacobs, J. E., Vernon, M. K., & Eccles, J. S. (2004). Relations between social self-perceptions, time use, and prosocial or problem behaviors during adolescence. *Journal of Adolescent Research*, *19*(1), 45–62. https://doi.org/10.1177/0743558403258225

January, A. M., Casey, R. J., & Paulson, D. (2011). A meta-analysis of classroom-wide interventions to build social skills: do they work? *School Psychology Review*, *40*(2), 242–256. https://doi.org/10.1080/02796015.2011.12087715

Jessor, R., Turbin, M. S., & Costa, F. M. (1998). Risk and protection in successful outcomes among disadvantaged adolescents. *Applied Developmental Science*, *2*(4), 194–208. https://doi.org/10.1207/s1532480xads0204_3

Kelloway, E. K. (1998). *Using LISREL for structural equation modeling: A researcher's guide*. Sage.

Kline, R. B. (1998). *Principles and practices of structural equation modeling*. Guilford Press.

Kline, R. (2011). Convergence of structural equation modeling and multilevel modeling. *The SAGE handbook of innovation in social research methods*, In M. Williams (Ed.), (pp. 562–589). SAGE Publications Ltd. https://www.doi.org/10.4135/9781446268261

Laguna, M., Mazur, Z., Kędra, M., & Ostrowski, K. (2020). Interventions stimulating prosocial helping behavior: A systematic review. *Journal of Applied Social Psychology*, *50*(11), 676–696. https://doi.org/10.1111/jasp.12704

Laible, D. (2007). Attachment with parents and peers in late adolescence: Links with emotional competence and social behavior. *Personality and Individual Differences*, *43*(5), 1185–1197. https://doi.org/10.1016/j.paid.2007.03.010

Larson, A., & Moses, T. (2017). Examining the link between stress events and prosocial behavior in adolescents: more ordinary magic? *Youth & Society*, *49*(6), 779–804. https://doi.org/10.1177/0044118X14563049

Lerner, R. M., Lerner, J. V., P. Bowers, E., & John Geldhof, G. (2015). Positive youth development and relational-developmental-systems. *Handbook of Child Psychology and Developmental Science*, 607–651. https://doi.org/10.1002/9781118963418.childpsy116

Lerner, R. M., Lerner, J. V., Urban, J. B., & Zaff, J. (2016). Evaluating programs aimed at promoting positive youth development: A relational development systems-based view. *Applied Developmental Science*, *20*(3), 175–187. https://doi.org/10.1080/10888691.2015.1082430

Luengo Kanacri, B. P., Zuffiano, A., Pastorelli, C., Jiménez-Moya, G., Tirado, L. U., Thartori, E., Gerbino, M., Cumsille, P., & Martinez, M. L. (2019). Cross-national evidences of a school-based universal programme for promoting prosocial behaviours in peer interactions: main theoretical communalities and local unicity. *International Journal of Psychology*, *55*(S1), 48–59. https://doi.org/10.1002/ijop.12579

Maassen, G. H., van Boxtel, H. W., & Goossens, F. A. (2005). Reliability of nominations and two-dimensional rating scale methods for sociometric status determination. *Journal of Applied Developmental Psychology*, *26*(1), 51–68. https://doi.org/10.1016/j.appdev.2004.10.005

McArdle, J. J., & Hamagami, F. (2001). Latent difference score structural models for linear dynamic analyses with incomplete longitudinal data. In L. M. Collins & A. G. Sayer (Eds.), *Decade of behavior. New methods for the analysis of change* (pp. 139–175). American Psychological Association. https://doi.org/10.1037/10409-005

Memmott-Elison, M. K., Holmgren, H. G., Padilla-Walker, L. M., & Hawkins, A. J. (2020). Associations between prosocial behavior, externalizing behaviors, and internalizing symptoms during adolescence: A meta-analysis. *Journal of Adolescence*, *80*(1), 98–114. https://doi.org/10.1016/j.adolescence.2020.01.012

Mesurado, B., Guerra, P., Richaud, M. C., & Rodriguez, L. M. (2019). Effectiveness of prosocial behavior interventions: A meta-analysis. In Gargiulo , P., Mesones Arroyo, H. (Eds.). *Psychiatry and neuroscience update* (pp. 259–271). Springer. https://doi.org/10.1007/978-3-319-95360-1_21

Muthén, L. K., & Muthén, B. O. (1998–2017). Mplus user's guide. Los Angeles, CA: Muthén & Muthén.

OECD. (2019). *Education at a Glance 2019: OECD Indicators*. https://doi.org/10.1787/f8d7880d-en

Pastorelli, C., Barbaranelli, C., Cermak, I., Rozsa, S., & Caprara, G. V. (1997). Measuring emotional instability, prosocial behavior and aggression in pre-adolescents: A cross-national study. *Personality and Individual Differences*, *23*(4), 691–703.

Rubin, K. H., Bukowski, W. M., & Parker, J. G. (2007). Peer interactions, relationships, and groups. In Eisenberg, N., Damon, W., Lerner, R. M. *Handbook of Child Psychology*, 3. https://doi.org/10.1002/9780470147658.chpsy0310

Russell, J. D., Graham, R. A., Neill, E. L., & Weems, C. F. (2016). Agreement in youth–parent perceptions of parenting behaviors: A case for testing measurement invariance in reporter discrepancy research. *Journal of Youth and Adolescence*, *45*(10), 2094–2107. https://doi.org/10.1007/s10964-016-0495-1

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In Zanna, M. P. (Ed.). *Advances in experimental social psychology*, Vol. 25. pp. 1–65. Academic Press. https://doi.org/10.1016/S0065-2601(08)60281-6

Sepúlveda Rico, C. E., López Camacho, D., & Gallego Acevedo, J. M. (2014). *Los límites de la estratificación: En busca de alternativas*. Editorial Universidad del Rosario. https://doi.org/10.7476/9789587385373

Terry, R. (2000). Recent advances in measurement theory and the use of sociometric techniques. *New Directions for Child and Adolescent Development*, *2000*(88), 27–53. https://doi.org/10.1002/cd.23220008805

Tolan, P. (2016). Positive youth development interventions: Advancing evaluation theory and practice. *Applied Developmental Science*, *20*(3), 147–149. https://doi.org/10.1080/10888691.2015.1014485

UNICEF. (2012). *Informe anual de Unicef*.

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, *3*(1), 4–70. https://doi.org/10.1177/109442810031002

Wentzel, K. R., Filisetti, L., & Looney, L. (2007). Adolescent prosocial behavior: the role of self-processes and contextual cues. *Child Development*, *78*(3), 895–910. https://doi.org/10.1111/j.1467-8624.2007.01039.x

Whitcomb, S. A. (2017). Assessing social skills and social–emotional strengths. In *Behavioral, social, and emotional assessment of children and adolescents* (pp. 375–405). Routledge. https://doi.org/10.4324/9781315747521-13

Williams, J. L., & Deutsch, N. L. (2016). Beyond between-group differences: Considering race, ethnicity, and culture in research on positive youth development programs. *Applied Developmental Science*, *20*(3), 203–213. https://doi.org/10.1080/10888691.2015.1113880

Yohalem, N., & Wilson-Ahlstrom, A. (2010). Inside the black box: Assessing and improving quality in youth programs. *American Journal of Community Psychology*, *45*(3), 350–357 https://doi.org/10.1007/s10464-010-9311-3.

Zuffianò, A., Alessandri, G., Kanacri, B. P. L., Pastorelli, C., Milioni, M., Ceravolo, R., Caprara, M. G., & Caprara, G. V. (2014). The relation between prosociality and self-esteem from middle-adolescence to young adulthood. *Personality and Individual Differences*, *63*, 24–29. https://doi.org/10.1016/j.paid.2014.01.041