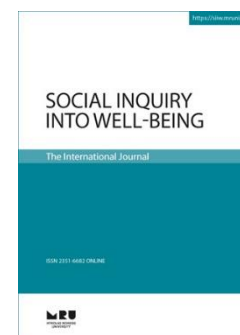




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Direct and Mediated Long-Term Effects of the Positive Youth Development Intervention Program *Try Volunteering* on Empathy and Prosocial Behavior

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Abstract

The primary aim of the current study was to evaluate the 16-months follow-up effects of the short-term school-based positive youth development (PYD) intervention program *Try Volunteering* on empathy and prosocial behavior. The secondary aim was to test the theory of change in prosocial behavior through the change of empathy in the intervention settings. The quasi-experimental study design (pre-test, post-test, follow-up at 4 months and follow-up at 16 months) was used for the program efficacy evaluation. The current study assessed 538 students, 272 from the intervention school (49.1% girls, aged from 13 to 16 (Mage = 15.26; SDage = 0.69) at pre-test) and 264 from the control school (40.1% girls, aged from 14 to 17 (Mage = 15.24; SDage = 0.65) at pre-test). The results of the multivariate Latent Growth Curve analysis indicated that empathy increased significantly in the intervention group and remained stable in the control group. No significant change was found in either of groups for prosocial behavior. In addition, the results revealed that the positive change in empathy fully mediates the relationship between program participation and positive change in prosocial behavior. The present findings highlighted the relevance of promoting empathy in school settings as a strategy for fostering prosocial behavior during adolescence as the positive contribution to community and society.

Keywords: school-based intervention, adolescence, empathy, prosocial behavior, positive youth development, latent growth curve, mediation

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Introduction

Prosocial behaviors are voluntary actions undertaken to benefit others and usually include sharing, consoling, and

helping (Eisenberg, Fabes, & Spinrad, 2006). These actions are integral to intervention goals that seek to promote Positive Youth Development (PYD). The perspective of PYD is a strength-based approach (Lerner, Lerner, Almerigi,

& Theokas, 2005) that encouraged a noticeable increase of research and practices that focus on youths thriving (Benson & Scales, 2009). According to the developmental system theory (Lerner et al., 2004), prosocial behaviors arise when the youth is thriving. Thriving could be induced by fostering PYD (Lerner et al., 2005) that comprises psychological, behavioral, and social characteristics of person-context relation named the Five Cs (Zarrett & Lerner, 2008). Empathy refers to one of the Cs also known as Caring (Roth & Brooks-Gunn, 2003). Therefore, as suggested by theory, fostering empathy should also lead to increased prosocial behavior. Following the perspective of PYD, the scope of the present study is to evaluate the long-term efficacy of the short-term school-based intervention program Try Volunteering, designed to promote the five Cs of PYD and prosocial behavior.

Beneficial Effects of Prosocial Behavior in Adolescence

Empirical research has consistently demonstrated the benefits of prosocial behavior for youth (see Eisenberg et al., 2006). Previous studies have identified, that prosocial adolescents have better peer relationships (Wentzel, 2014), lower risk for externalizing behaviors (e.g. Kokko & Pulkkinen, 2000) or better school performance (Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000), compared with less prosocial peers. Layous, Nelson, Oberle, Schonert-Reichl, & Lyubomirsky (2012) found that prosocial acts increase general well-being and peer acceptance. Also, the longitudinal research on prosocial behavior highlighted that increased prosocial behavior in adolescence leads to more adaptive personality development, as it predicts higher rates of conscientiousness, agreeableness and openness in emerging adulthood (Kanacri et al., 2014).

Links Between Empathy and Prosocial Behavior

As defined by Hoffman (2008), empathy is ‘an emotional state triggered by another's emotional state or situation, in which one feels what the other feels or would normally be expected to feel in his situation’ (p. 440). In the recent review Davis (2015) provided numerous evidence of the positive relationships between empathy and prosocial behavior. However, Decety, Bartal, Uzevovsky, & Knafo-Noam (2016) argue, that empathy evolves in the context of parental care for their children and within the relationships of siblings, to help each other. Thus, the development of empathy is paired with the development of prosocial behavior and is rooted deep in childhood. An alternative definition of empathy even comprises some aspects of the definition of prosocial behavior. For example, Killen and Smetana (2015) suggests, that empathy reflects emotional and cognitive reactions that often lead to acts which benefit others. Besides, in research of adolescents, empathy and prosocial behavior are often paired as desirable outcomes, that emerge in different contexts, such as family (e.g., Yoo, Feng, & Day, 2013) or school (e.g., Barr & Higgins-D'Alessandro, 2007).

The literature on fostering empathy and prosocial behavior in adolescence is, however, limited. Van der Graaff

et al. (2014) provided evidence that empathy increases in adolescence as a result of cognitive development. Intervention research provides some evidence that empathy could be induced in youth by increasing emotional competence (Castillo, Salguero, Fernández-Berrocal, & Balluerka, 2013). There is also some evidence, that intervention designed to improve empathy in early adolescence helps to promote prosocial behavior, surprisingly, without any increase in empathy (Schonert-Reichl, Smith, Zaidman-Zait, & Hertzman, 2012).

The empirical evidence from the literature of positive youth development suggests that there is a positive longitudinal relationship between PYD and later contribution to community (e.g., Jelicic, Bobek, Phelps, Lerner, & Lerner, 2007). The developers of PYD-based intervention *CEPIDEA* reported significant program effects on prosocial behavior (Caprara et al., 2014; Caprara, Kanacri, Zuffianò, Gerbino, & Pastorelli, 2015) and found, that prosocial behavior mediated the relationship between program participation and aggression, however, failed to find any enhancement in empathy. Thus, to date, no evidence was found, that proves the relationships between empathy and prosocial behavior in intervention settings.

The School-Based Intervention Program Try Volunteering

In this study, I evaluated the PYD program called *Try Volunteering* which was developed and implemented following the PYD program criteria described by Roth & Brooks-Gunn (2003). They suggested three defining characteristics of the quality PYD programs: (1) *program goals*, targeted towards the Five Cs of PYD (Competence, Confidence, Connection, Character, and Caring); (2) *program atmosphere*, that is empowering and encouraging positive relationships with adults and peers; (3) *program activities* that provide opportunities for practicing new skills and broadening horizons.

During the two months long school-based intervention program adolescents participated in activities that were built specifically to foster the Five Cs of positive youth development, and empathy was among them. In this way, the *program goal* criterion was targeted. The University students-volunteers delivered the program. In order to ensure the appropriate *program atmosphere*, volunteers with the positive attitude towards adolescent school children were selected as program leaders; program leaders undertook training which provided them with the knowledge about the program and improved their socio-emotional skills; program leaders encouraged positive relationships between the participating adolescents; program structure and activities were organized with the purpose of empowering youth to take actions and achieve their goals; program leaders communicated the positive behavior expectations; every participant could receive individual positive attention and recognition. After the program delivery, the participants could choose to participate in community support-based volunteering activities under the further supervision of the program leaders in order to learn how to make meaningful choices and take responsibility.

The *program activities* criterion was met by providing youth with many opportunities for acquiring new skills and nurturing their talents; participants had a possibility to deal with the real situations happening in their lives. Having completed the program, participants were introduced with various volunteering opportunities and were given a chance to meet real people from different volunteer-based organizations. This was done to broaden participants' horizons and to provide the youth with opportunities for getting involved in new challenging activities. In general, each session consisted of several parts: a short recap of the last session (except for the first session which included the program leader's introduction instead); a brief theoretical part during which the participants could gain some new knowledge; a practical part in which all participants were involved in individual and/or group activities; a reflection part during which the participants were invited to share their experiences/opinions/feelings (sometimes the practical and the reflection parts were organized interchangeably); and a closing part which was usually aimed at clarifying the take-home message.

School has been identified as a good context for the program implementation as it is an environment in which usually structural activities and learning take place (Masia-Warner, Nangle, & Hansen, 2006). As recommended by Greenberg, Domitrovich, Graczyk, and Zins (2003), the school administration was involved in the planning process at the pre-adoption phase, and every effort was made to create a problem-solving atmosphere to facilitate the resolution of possible difficulties. Program participants and school teachers had an opportunity to learn about the content of the program and to meet the program developers as well as the program leaders. The quality of program implementation was monitored at the *delivery phase*. In addition, the close collaboration was ensured between the program developers and the leaders. At the *post-delivery phase*, the preliminary results of the program's efficacy were disseminated, the implications for the further implementation of the program were discussed, and feedback was obtained from the school administration.

The Present Study

The present study aimed to evaluate the 16-months follow-up effects of the short-term school-based intervention program *Try Volunteering* on empathy and prosocial behavior as well to investigate the relationships between these two constructs in positive youth development intervention settings. Since the development and implementation of the intervention met the general criteria of the PYD programs (Roth & Brooks-Gunn, 2003), I hypothesized that the both empathy and prosocial behavior will increase in the intervention group and will remain stable in the control group.

As noted by MacKinnon (2011), intervention studies should not only test for the intervention effects on targeted outcomes but also should integrate program-outcome mediators, to test the mechanisms of change in the particular intervention. Based on the theory of PYD (Lerner et al., 2005) which suggests that the indicators of PYD predict contributions to community and society, I hypothesized, that

the positive change in empathy will partly mediate the relationship between program participation and positive change in prosocial behavior.

No previous studies were found integrating empathy as a mediator between PYD program participation and prosocial behavior. The current study contributes to the developmental and intervention research by addressing this gap. In addition, based on the literature analysis, relationships between empathy and prosocial behavior was tested in intervention settings, in this way contributing to the field, as the evidence of this relationship from intervention studies are limited.

Method

Design

The quasi-experimental design was used for the evaluation of the efficacy of the PYD intervention program *Try Volunteering*. Four measures (pre-test, post-test, follow-up at four months after the post-test, and follow-up at sixteen months after the post-test) in the intervention and control groups were used to evaluate program's efficacy. Twenty-six ninth-to-tenth-grade classrooms from two middle schools participated in the present study. All children from one school were assigned to the intervention condition and all children from the other school to the control condition. Schools were selected for the study based on their similarity of the structure, both being gymnasiums with 9th to 12th graders, and the neighborhood, both located in the areas with similar neighborhood characteristics, e.g., non-central location, middle-class apartment housing, etc.

Participants

The study included 538 participants, 272 were from the intervention school (49.1% girls, aged from 13 to 16 ($M_{age} = 15.26$; $SD_{age} = 0.69$) at pre-test) and 264 from the control school (40.1% girls, aged from 14 to 17 ($M_{age} = 15.24$; $SD_{age} = 0.65$) at pre-test). The general attrition rate was 6.1% in the post-test, 9.3% in the follow-up at four months, and 18% in the follow-up at sixteen months. Most of the participants (92.6%) were Lithuanians. The subjects in the intervention and control groups did not differ in terms of age ($t = .303$, $p > .01$) and gender ($\chi^2 = 4.377$, $p > .01$). From the intervention group, only those participants were included in the study who participated in at least half of the program meetings. Twenty-three percent of the intervention sample attended the full program; 32% missed one meeting; 45% missed more than one meeting but attended no fewer than four meetings.

Procedures

The study was conducted from May 2014 to September 2016. It consisted of the following stages: program development; selection, training, and supervision of the program leaders; intervention delivery (classroom and school activities); and assessments (pre-test in September 2014, post-test in January 2015, follow-up 1 in May 2015 and follow-up 2 in September 2016).

Intervention. The short-term school-based PYD program was developed by the research team of the longitudinal project “Mechanisms of promoting positive youth development in the context of socio-economical transformations (POSIDEV)” between May and October 2014. Program activities took place between November and December 2014 and were organized at the end of the school day during the normal school hours. Four out of the eight sessions were at least to some extent focused on fostering empathy. Before starting the program, the introductory meeting was organized to present the intervention program for the school community. A wide range of individual and group activities (e.g., group discussions, role-plays, and personal reflections) were organized during the program sessions. At the end of every session, program leaders provided some insights of how the strengths of youth could be further encouraged by taking part in the volunteering activities after the program.

The program was delivered by 28 program leaders (university students-volunteers). Before the intervention, the program leaders participated in a two-day training led by program developers. All program leaders signed volunteering contracts. Group supervisions of the program leaders were organized once a week, right after the delivery of the session. After the program delivery, a volunteering fair was held during which participants had an opportunity to meet real people from volunteer-based organizations such as animal shelters, Caritas-run services, child care centers, etc. Participants were free to choose whether and where to volunteer. Approximately 10 percent of the intervention group decided to try out volunteering right after the delivery of the program.

Assessment. Assessment dates and conditions were discussed with every school before each assessment. Parents were informed about the study in writing. Informed parental consents were obtained in passive form. Prior to each assessment, adolescents were informed (in the case of the first assessment) or reminded (second through fourth assessments) of the purpose of the study and that their participation was voluntary. Questionnaires were administered in a class by researchers during normal school hours. Students who were absent on the day of data collection were contacted by the school personnel during the following one or two weeks and asked to fill out the questionnaire.

Measures

Empathy. The *Caring* subscale of the Positive Youth Development Inventory (PYDI, Arnold, Nott, & Meinhold, 2012) was used to assess empathy. The scale consisted of 8 items (e.g., “When one of my friends is hurting, I hurt too”). Each item is rated on a four-point scale from (1) strongly disagree to (4) strongly agree. The Lithuanian version of the PYDI was developed by the researchers from the POSIDEV project team. The comparison of the translated Lithuanian version with the back-translation to the original did not reveal any inconsistencies. In the current study, Cronbach's alphas for the used subscale ranged across the four measurement points from .81 to .86.

Prosocial behavior. The *Contribution to Community* subscale of the Three-Dimensional Contribution Scale (3DCON, Truskauskaitė-Kunevičienė & Goda Kaniušonytė, 2016) was used to assess prosocial behavior. The scale consisted of 5 items (e.g., “I’m engaged in volunteering activities”). Each item is rated on a five-point scale from (1) strongly disagree to (5) strongly agree. The 3DCON was developed by the researchers from the POSIDEV project team. In the current study, Cronbach's alphas for the used subscale ranged across the four measurement points from .90 to .91.

Data Analytic Approach

Mean level effects. To examine the potential effects of the PYD program *Try Volunteering*, I estimated the mean-level changes in empathy and prosocial behavior by applying the multivariate Latent Growth Curve Approach (LGC; Bollen & Curran, 2006). The multiple-group analysis with intervention and control group was conducted. Mean levels (i.e., intercepts) and mean change rates (i.e., slopes) were estimated, based on individual growth trajectories of all participants. In the current study, the intercept was centered at the first time point to represent the initial status of the growth by fixing all the intercept factor loadings at 1 and the first slope factor loading at 0.

Intervention effects were calculated following the recommendations for correct effect size calculation in the growth modeling analysis (Feingold, 2009). Therefore, the difference between the estimated means of the intervention and the control groups at the final time-point (follow-up) divided by the pooled baseline (pre-test) standard deviation was calculated to obtain between-group effects. The bias-corrected estimates of the effect size (d_{unb} ; see Fritz, Morris, & Richler (2012) for exact formula) were provided.

Mediated effects. Based on the univariate mean level change results, I tested the specific mediational model by using a parallel process growth curve modeling with the slope as the putative mediator (Von Soest & Hagtvet, 2011), by applying the conditional LGC with treatment condition (TC) as a predictor. A significant effect of TC on the slope was the effect of the intervention on change over time in the outcome considered. The differences between the intervention and control group at pre-test were assessed by regressing the intercept on the TC. Moreover, it was controlled for possible gender effects by inserting them in the conditional LGC. The mediated effect is indicated by the effect of the intervention on mediator multiplied by the effect of mediator on the outcome.

Due to the non-perfect normality of the variables, maximum likelihood with robust standard errors (MLR) was chosen as the method for estimating parameters (Muthén & Muthén, 2012) in all analyses. As the χ^2 statistic is sensitive to sample size, the comparative fit index (CFI), Tucker-Lewis Index (TLI) > .90, and root mean square of approximation (RMSEA) < .10 were considered as indicators of acceptable model fit (Kline, 2010). Full information maximum likelihood (FIML) was used as a method for estimating missing data, as it produces less biased estimates of missing values even when the pattern of missingness is selective and cannot be ignored (Baraldi &

Enders, 2010). All analyses were conducted in Mplus 7.4 (Muthén & Muthén, 2012), the mean scores of the scales were used.

Results

Mean Level Effects

The multivariate latent model, including growth curves of empathy and prosocial behavior, had an acceptable model fit ($\chi^2(52) = 129.14, p < .001$; CFI = .93; TLI = .92; RMSEA = .07 [.06; .09]). Observed means and standard deviations for boys and girls in intervention and control groups are

presented in Table 1. Estimated means of intercepts and slopes are displayed in Table 2. The hypothesis about the mean level change in empathy was confirmed, as empathy increased significantly in the intervention group and remained stable in the control group. The between-group intervention effect on empathy is relatively small ($d_{\text{unb}} = 0.16$ [0.01; 0.33]), however, with the positive expected population effect. No significant change was found in either of groups for prosocial behavior. Thus the hypothesis about the mean level change in prosocial behavior was rejected.

Table 1. Descriptive statistics

	Pre-test		Post-test		Follow-up at 4 months		Follow-up at 16 months	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Empathy								
Intervention	3.00 (0.42)	3.29 (0.41)	2.99 (0.45)	3.29 (0.42)	3.01 (0.38)	3.23 (0.40)	3.04 (0.45)	3.35 (0.42)
Control	3.03 (0.43)	3.33 (0.39)	3.05 (0.47)	3.25 (0.40)	2.99 (0.50)	3.28 (0.43)	3.05 (0.49)	3.28 (0.46)
Prosocial behavior								
Intervention	3.05 (0.67)	3.22 (0.75)	2.81 (0.76)	3.06 (0.69)	2.78 (0.79)	3.16 (0.74)	2.72 (0.93)	3.25 (0.75)
Control	3.04 (0.84)	3.13 (0.66)	2.86 (0.83)	3.19 (0.83)	2.82 (0.94)	3.26 (0.78)	2.81 (0.96)	3.23 (0.84)

Note. Means and standard deviations (in parentheses). Intervention group ($n = 272$), Control group ($n = 266$). Higher scores indicate more of that quality.

Mediated effects

Based on the results of LGC, I tested the mediational model in which it was considered that intervention might have an indirect effect on prosocial behavior through empathy. The latent growth curve mediational model (see Figure 1) yielded an overall acceptable fit ($\chi^2(35) = 100.04, p < .001$; CFI = .94; TLI = .93; RMSEA = .06 [.05; .07]). The results revealed that intervention and control groups did not differ in initial level of empathy and prosocial behavior, as intervention condition did not predict the intercepts. The conditional mediation model confirmed and extended the results of multiple-group LGC, indicating, that intervention

condition has a significant effect on the slope of empathy but not on the slope of prosocial behavior. However, the analysis of indirect effect yielded the significant results (IND = .14, $p < .05$), indicating, that growth in empathy fully mediated the effect of the intervention on prosocial behavior.

In addition, we found, that gender was a significant predictor of the initial levels of both empathy and prosocial behavior, indicating, that girls scored higher on both constructs. Nonetheless, gender also predicted the slope of prosocial behavior. Thus, the results revealed that an increase in prosocial behavior was bigger for girls, compared to boys.

Table 2. Growth factors of empathy and prosocial behavior in intervention and control group

	MeanI	$\sigma^2 I$	MeanS	$\sigma^2 S$
Empathy				
Intervention	3.13***	.13***	0.013**	.002
Control	3.13***	.10***	0.001	.000
Prosocial Behavior				
Intervention	3.04***	.27***	-0.021	.000
Control	3.04***	.232***	-0.010	.007

Note. I = intercept, S = slope, ** $p < .01$, *** $p < .001$, Intervention group ($n = 272$), Control group ($n = 266$).

Discussion

The primary aim of the current study was to evaluate the efficacy of the short-term school-based positive youth development intervention program Try Volunteering on empathy and prosocial behavior. The secondary aim was to

investigate the relationship between the empathy and prosocial behavior in PYD intervention settings. The intervention program was developed by applying the PYD framework and following the criteria for the program goal, atmosphere, and activities (Roth & Brooks-Gunn, 2003). For this reason, I expected that the intervention program would

foster both empathy and prosocial behavior. In addition, based on the theory of positive youth development (Lerner et al., 2005), I expected, that the change in empathy will mediate the relationships between program participation and prosocial behavior. The overall findings of the current study indicate that enhancement in empathy contributes to increased prosocial behavior and suggests, that intervention aimed at promoting positive youth development may indeed have a potential to direct developmental trajectories towards positive contributions to community (Jelicic et al., 2007).

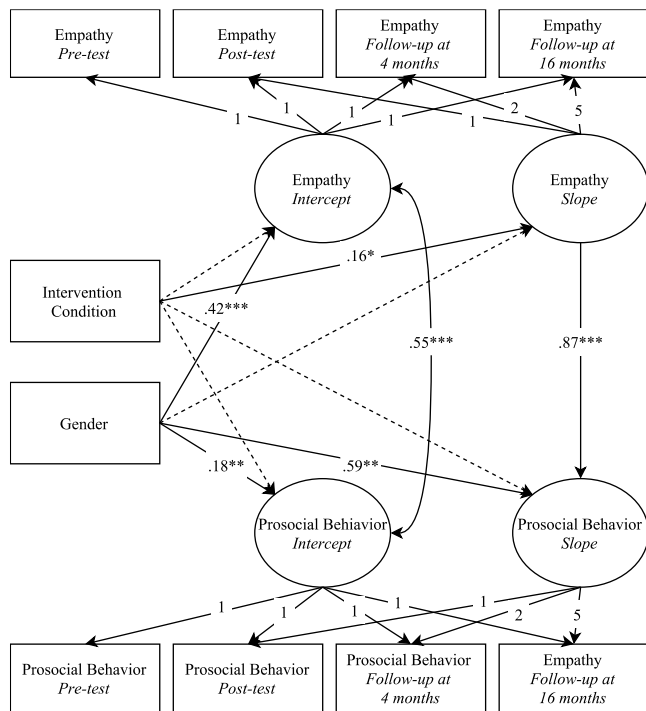


Figure 1. Latent growth curve mediational model

Note. Intervention group ($n = 272$), Control group ($n = 266$). Treatment Condition (0 = control group; 1 = intervention group); Gender (1 = male; 2 = female). Only statistically significant coefficients (standardized) were reported. Dashed lines represent not statistically significant paths ($p > .05$). * $p < .05$; ** $p < .01$; *** $p < .001$.

In particular, adolescents in the intervention group reported a small but significant increase in empathy. This result confirmed the findings by Castillo et al. (2013), suggesting, that the growth of empathy may be achieved with emotional skill training, however, the expected change is rather small. Our findings also supported the previous findings by Volbrecht, Lemery-Chalfant, Aksan, Zahn-Waxler, & Goldsmith (2007), suggesting, that the development of empathy also depends on brain development and early experiences, thus the contextual changes may have only modest influences on empathy in adolescence. In addition, the magnitude of the change in empathy is in line with the results of meta-analysis of the school-based intervention programs, as the authors reported small effect sizes for positive behaviors (Durlak et al., 2011).

The results of current study highlighted, that empathy and prosocial behavior are strongly related, as an increase in empathy resulted in an increase of prosocial behavior. Our

findings are in line with the results of the recent review conducted by Davis (2015) and provide additional evidence of the strong relationships between empathy and prosocial behavior from the intervention research. Moreover, I found, that empathy fully mediated the relationship between program participation and prosocial behavior, suggesting that programs aiming at the enhancement of prosocial behavior should strongly emphasize on the promotion of empathy. Thus, the current study provides empirical support for what is already done in some PYD based intervention studies (e.g. Caprara et al., 2014), as it proves empathy to be an underlying mechanism for promotion of positive contributions to community and society.

It is noteworthy that some gender differences were found in our study, as girls scored higher than boys both on empathy and prosocial behavior. This result is in line with previous findings when taking into account empathy and prosocial behavior separately (e.g. Mestre, Samper, Frías, & Tur, 2009; Jelicic et al., 2007) or analyzing both constructs in one study (e.g. Erdem, DuBois, Larose, Wit, & Lipman, 2016). Interestingly, I also found, that an increase in prosocial behavior was bigger for girls than for boys, suggesting, that the current program is more efficient for girls than for boys. It is possible that this difference is due to the female gender domination in program delivery. For example, Artz and Welsch (2014) found that gender of the teacher and students influenced students' results and that male and female teachers are more effective when teaching their gender. This finding implies that some elements of the current program implementation could be reconsidered.

Strengths and Limitations

This study should be seen both in light of its strengths and limitations. Among the strengths is applying the theoretical PYD perspective in the phase of program development, delivery, and evaluation. The criteria for the PYD programs are formulated more than a decade ago (Roth and Brooks-Gunn, 2003), however, few PYD programs use them to test the theory in practice, as it was done in the current study. The another strength is the quasi-experimental study design with four measurement points that allows testing relatively long-term program effects. Although the benefits of quasi-experimental comparison were acknowledged a long time, the application of it is still rare for the evaluation of the PYD programs (Roth & Brooks-Gunn, 2015). In addition, the intervention and control groups were from the different school to avoid the diffusion of treatment effects (Cook & Campbell, 1979). The further strength is the application of advanced statistical analysis. The conditional LGC modeling is comprehensive, however, rarely used strategy for intervention evaluation (Von Soest & Hagtvet, 2011).

Among the limitations of the current study, is using self-report measures for the evaluation of the constructs. It is known that prosocial behavior has a high social desirability (Crothers & Levinson, 2004), and changes in empathic capacities may be difficult to acknowledge and report for adolescents within the relatively short period (Caprara et al., 2014). Therefore, the additional parents and/or teachers' reports could be very much informative for a better understanding of the program results. The other issues to be addressed by future studies is the necessity to focus on the

ecological validity of the program, namely the extent to which it might be extended to different real world conditions, as the current program was implemented in a single community. Further steps should lead to strategies enabling schools to adopt the intervention without such a substantial involvement of researchers.

Despite the limitations concerning the program delivery and evaluation, the school-based positive youth development intervention program Try volunteering supports and expands existing evidence regarding the

enhancement as well as the underlying mechanisms of prosocial behavior within the school environment and in the classroom context. Indeed, the present findings may be helpful for school administration, teachers, educational psychologists, and policy makers, because they highlight the relevance of promoting empathy in school settings as a strategy for fostering prosocial behavior as the positive contribution to community and society during adolescence.

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