

PATHS in Croatia: A school-based randomised-controlled trial of a social and emotional learning curriculum

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This study represents the first rigorous evaluation of a social-emotional learning curriculum, PATHS (Promoting Alternative Thinking Strategies; Kusché & Greenberg, 1994), in elementary schools in Croatia. This study randomly assigned 29 schools to receive the universal preventive intervention or continue with usual practices. Within those schools, this study included 57 classrooms and 568 children. Teachers rated nine child behaviours in the middle of first grade (pre-intervention) and near the end of second grade (post-intervention). Hierarchical linear models, nesting children within classrooms, revealed few changes in behaviour across the sample as a whole or among higher risk children. However, there were changes on eight of the nine behaviours for lower risk children. The findings are considered in the context of the classroom culture and teachers' preparation and readiness to implement a social-emotional learning curriculum in Croatia. This study highlights the need to supplement universal preventive interventions with selective preventive interventions that can provide more intensive and targeted skill practice for higher risk children. This study also highlights the nuanced effects of a universal preventive intervention in helping different children in different ways.

Keywords: Social-emotional learning; Universal preventive intervention; Randomised-controlled trial.

Croatia, a country of 4.2 million residents, became independent from the former Yugoslavia in 1991, but then was involved in a 4-year war. This complex conflict involving Croats and Serbs led to the death of many civilians and continuing trauma for many survivors.

Since independence, Croatia has struggled to establish a fair government and an educated and healthy population. In a recent poll, 71% of citizens identified political corruption as a significant problem, and 85% of citizens described the country's situation as mostly or very bad (Pilarov barometar hrvatskoga društva, 2014). The unemployment rate is 20% (Croatian Bureau of Statistics, http://www.dzs.hr/default_e.htm), and 21% of citizens live below the federal poverty line (http://data.worldbank.org/country/croatia#cp_wdi). Overall, 31% of adults have only an elementary school education,

53% have a high school education, and 16% have a college education (Croatian Bureau of Statistics, 2014; http://www.dzs.hr/default_e.htm). During their lifetimes, 27% of citizens in Croatia experience mental health disorders, which are often comorbid with many physical health problems (World Health Organization, 2011).

Children in Croatia are also under stress. Physical abuse occurs in 26% and 41% of families with 5th and 10th grade children, respectively (Ajdukovic, Rimac, Rajter, & Susac, 2013). Over 20% of children report being recent victims of bullying by peers, and 10% report being the victim of repeated violence by peers (Pregrad, 2007). About 59% of adolescent boys and 48% of adolescent girls engage in binge drinking, placing Croatia third highest among all European countries (Kuzman, Pejnović Franelić, Pavić Šimetin, & Pejak, 2011).

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Social-emotional learning

In 2005, the Croatian government-initiated educational reform, attempting to tailor schools to children's needs by introducing new teaching methods (<http://public.mzos.hr/Default.aspx?sec=2501>). There is a growing sense in Croatia that the educational system needs to better respond to the socio-political context and responsibly contribute to the development and well-being of children. Influenced by research from other parts of Europe and the world, the Croatian educational system is slowly starting to recognise how the quality of relationships and emotional processes affect children's commitment to learning, engagement in schoolwork and graduation rates (Elias et al., 1997).

One part of the educational reform is to introduce social-emotional learning (SEL) curricula into the schools. SEL curricula have been shown to improve academic achievement and positive behaviour while reducing subjective distress and conduct problems (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). SEL involves the processes through which children acquire and effectively apply the knowledge, attitudes and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships and make responsible decisions (Weissberg, Goren, Domitrovich, & Dusenbury, 2013). Teachers help children develop these competencies through engaging curricula materials and implementing specific instructional and classroom-management practices (Weissberg et al., 2013).

The PATHS curriculum

PATHS (Promoting Alternative Thinking Strategies; Kusché & Greenberg, 1994) is one of the best-validated and most successful SEL curricula for primary school children. In multiple randomised-controlled trials implemented in many distinct settings with a wide variety of children, PATHS has produced positive changes in children's understanding of emotions, self-control, social competence and behaviour problems (Conduct Problems Prevention Research Group, 2010; Greenberg, Kusché, Cook, & Quamma, 1995). There also is evidence that PATHS has changed children's inhibitory control, verbal fluency, depressive symptoms, and externalising problems, such as oppositional behaviour and physical aggression (Greenberg, 2006). Moreover, all of those trials have documented the maintenance of improvements over time.

Importantly, independent replications of PATHS have demonstrated positive changes in children's behaviour. Replications in the United States have found changes in multiple aspects of children's social information processing (Crean & Johnson, 2013). Replications in Germany,

Great Britain and the Netherlands have found changes in emotional understanding, social competence, inattention/impulsivity and child behaviour problems, including physical aggression (Hacker, Lösel, Stemmler, Jaursch, & Beelmann, 2007; Hindley & Reed, 1999; Louwe, van Overveld, Merk, de Castro, & en Knoops, W, 2007).

Even so, not all replications are as successful. In a trial in Switzerland, the implementation of PATHS resulted in decreased aggression among all children and decreased impulsive behaviour among those children who initially had high levels of impulsive behaviour (Malti, Ribeaud, & Eisner, 2011); however, contrary to expectations, PATHS did not affect children's prosocial behaviours. In another trial in Great Britain, the implementation of PATHS was associated with early improvements in learning behaviours as well as aggression, hyperactivity and peer problems, but these improvements were not sustained past 1 year (Little et al., 2012). In another trial in the Netherlands, low levels of PATHS implementation produced no changes in children's positive or negative behaviours (Goosens et al., 2012). Trials like these highlight the challenges inherent in implementing an empirically validated preventive intervention within a new culture and context.

The effects of universal preventive interventions

In contrast to selective or indicated preventive interventions, universal preventive interventions are delivered to all children. Sometimes universal preventive interventions are chosen because of the belief that all children will benefit. Sometimes such interventions are chosen because of difficulties screening or identifying which children are in need. If all children participate in an intervention, higher risk children are not stigmatised (Offord, 2000). In addition, if all children participate in an intervention, a common language and new community norms are established. These shared expectations for behaviour allow all children to support and scaffold one another in their acquisition of new skills.

Often, however, when preventive interventions are evaluated, there is little consideration of those nuances in how the intervention is operating and whom it is actually helping. Although it is reassuring to have main effects of intervention, it is usually unclear whether such main effects are the result of a comparable improvement in the entire intervention sample. Larger improvements that only occur in specific subgroups of the sample also can result in a statistically significant "average" intervention effect. In many cases, it is apparent from the outset that a universal preventive intervention is unlikely to benefit all children. For example, children who already are displaying high levels of positive behaviours and low levels of negative behaviours are unlikely to demonstrate substantial improvements. Similarly, children who are

displaying extreme levels of negative behaviours may not show improvements because the preventive intervention is insufficient to meet their needs.

When moderation of intervention effects is examined, it is often children who are displaying some initial problems who benefit the most from universal preventive interventions. In Head Start REDI (Research-Based, Developmentally-Informed)—which included the preschool version of PATHS as an intervention component—it was children with low levels of behavioural inhibition who showed the greatest gains in prosocial behaviour, emotion regulation and physical aggression (Bierman, Nix, Greenberg, Blair & Domitrovich, 2008). Similarly in both Germany and Switzerland, it was children with the most severe initial problems who showed the most improvements (Hacker et al., 2007; Malti et al., 2011).

The present study

Aside from a pilot study of PATHS (Novak, Vorkapić Jugovac, & Šiljan Bembić, 2010), the present study represents the first attempt to test an SEL curriculum in elementary schools in Croatia. The study relied on a randomised-controlled design to evaluate the impact of PATHS in this new context. The study also identified subgroups of higher and lower risk children at school entry to explore whether PATHS was differentially effective within each of those subgroups.

METHOD

This study was approved by the Institutional Review Board of the Faculty of the Education and Rehabilitation Sciences at the University of Zagreb. Project staff members collected active informed consent from all classroom teachers, who received a small financial incentive of about €40 for participating in the study. The teachers then obtained active informed consent from the parents of all children participating in the study.

Study design

Originally, 30 schools were recruited with the help of local authorities in Zagreb, Rijeka and Istria, Croatia, who were partners in the study. Schools were matched within region on neighbourhood characteristics, family socioeconomic status, percentage of children receiving free lunches, school size, class size and average achievement scores. One school within each pair was randomly selected to receive the intervention, and the other school was assigned to continue its usual practice. Two first grade classrooms within each school were designated to participate; to avoid contamination, both classrooms within each

school were assigned to the same condition. Although all children within each of the original 60 classrooms participated in PATHS or usual practice, only 10 children from each classroom were randomly selected for assessment.

Despite that plan, one of the original schools in the PATHS condition (and all 20 children) had to be excluded because both teachers failed to complete the initial assessments of children. Likewise, one original classroom in the usual practice control condition (and all 10 children) had to be excluded because the teacher failed to complete the initial assessment. In addition, one selected child in each of two other classrooms in the control condition had to be excluded because the teacher failed to complete the initial assessment. Thus, for the purposes of evaluating the effectiveness of PATHS, sample size was 568.

Participants

This study included 568 children, 47% of whom were girls. At the beginning of this study, all children were about 7 years old and in the middle of first grade. At the end of the study, children were near the end of second grade.

Intervention condition

All PATHS lessons were translated into Croatian by a professional translator. They were double-checked for content and nuance of subject matter by the first two authors of this study, who are fluent in English and Croatian and have advanced degrees in child psychology and prevention science.

Classroom teachers in the PATHS study condition were expected to conduct 63 lessons, about two per week, across the last half of first grade and first half of second grade. (The same teachers were assigned to the same classrooms in both years). These lessons focused on prosocial skills children need to initiate social interactions and make friends (Kusché & Greenberg, 1994). The lessons teach children how to identify and label feelings in themselves and recognise that other children have feelings, too. The lessons offer concrete strategies the children can use to manage uncomfortable feelings. The lessons incorporate a multi-step process to understand peer problems and provide many role-play opportunities in which children practice resolving conflict without resorting to physical aggression. Throughout the lessons, there is an emphasis on recruiting language to regulate behaviour and communicate effectively with others (Greenberg, 2006). The lessons are assumed to help establish a caring and supportive learning community that is in place across the school day.

Before conducting any lessons, teachers completed 2 days of instruction, typical and recommended amount. This instruction was conducted by certified PATHS

trainers from the United States. Between first and second grades, teachers completed two more days of instruction. In addition, local coaches observed each teacher once per month to provide feedback on how she or he conducted PATHS lessons and generalised program content outside of the lessons. These local coaches completed checklists of program implementation, which indicated that quality was high with teachers delivering 90.95% of the PATHS curriculum.

Measures

All measures used in this study were translated from English into Croatian by the first two authors of this study. The validity of the measures for this different context was checked by analysing factor structure and reliability. Cronbach's alpha for each of the measures was comparable with the alpha in English, when used with children in the United States (Bierman, Nix et al., 2008). These high alphas suggest it is not unreasonable to assume a single factor, as occurs in English in the United States.

In the winter of the first grade year, teachers completed pre-intervention ratings of child behaviours. In the spring of the second grade year, teachers completed the same battery of post-intervention ratings. This study relied on ratings of nine child behaviours.

Prosocial behaviour

Prosocial behaviour was assessed with six items from the *Social Competence Scale* (<http://www.fasttrackproject.org/techrept/s/sct/>). Sample items were "Shares with others" and "Is helpful to others." All items were rated on a 6-point Likert scale with response options ranging from almost never to almost always ($\alpha = .88$).

Emotion regulation

Emotion regulation was assessed with seven items from the *Social Competence Scale* (<http://www.fasttrackproject.org/techrept/s/sct/>). Sample items were "Controls temper when there is a disagreement" and "Accepts things not going her/his way." All items were rated on a 6-point Likert scale with response options ranging from almost never to almost always ($\alpha = .89$).

Learning behaviour

Learning behaviour was assessed with 8 items from the *School Readiness Questionnaire* (Bierman, Domitrovich et al., 2008). Sample items were "This child is ready for the cognitive demands of school" and "This child seems enthusiastic about learning new things." All items were rated on a 3-point Likert scale with response options ranging from does not apply to most often applies ($\alpha = .92$).

Inattention

Inattention was assessed with eight items from the Inattentive-Impulsive subscale of the *ADHD Rating Scale* (DuPaul, 1991). Sample items were "Is easily distracted" and "Has trouble following directions." All items were rated on a 4-point Likert scale, with response options ranging from not at all to very much ($\alpha = .94$).

Hyperactivity

Hyperactivity was assessed with eight items from the Hyperactive-Impulsive subscale of the *ADHD Rating Scale* (DuPaul, 1991). Sample items were "Has trouble waiting her/his turn" and "Does physically dangerous things without thinking." All items were rated on a 4-point Likert scale, with response options ranging from not at all to very much ($\alpha = .95$).

Oppositional behaviour

Oppositional behaviour was assessed with seven items from the Authority Acceptance subscale of the *Teacher Observation of Classroom Adaptation-Revised* (Werthamer-Larsson, Kellam, & Wheeler, 1991). Sample items were "Ignores or refuses to obey adults" and "Breaks things on purpose." All items were rated on a 6-point Likert scale with response options ranging from almost never to almost always ($\alpha = .91$).

Physical aggression

Physical aggression was assessed with six items adapted from the Authority Acceptance subscale of the *Teacher Observation of Classroom Adaptation-Revised* (Werthamer-Larsson et al., 1991). Sample items were "Threatens to hit or beat up other children" and "Physically attacks people." All items were rated on a 6-point Likert scale with response options ranging from almost never to almost always ($\alpha = .93$).

Peer problems

Peer problems were assessed with five items from the Peer Problems subscale of the *Strengths and Difficulties Questionnaire* (Goodman, 1997; Goodman et al., 2010). Sample items were "Picked on or bullied by other youth" and "Would rather be alone than with other youth." All items were rated on a 3-point Likert scale, with response options ranging from not true to certainly true ($\alpha = .65$).

Withdrawn/depressed behaviour

Withdrawn/depressed behaviour was assessed with six commonly used items compiled for Head Start REDI

TABLE 1
Means and standard deviations of child behaviours

	<i>Pre-intervention</i>			<i>Post-intervention</i>		
	<i>Control group mean (n = 288)</i>	<i>PATHS group mean (n = 280)</i>	<i>Pooled SD</i>	<i>Control group mean (n = 281)</i>	<i>PATHS group mean (n = 265)</i>	<i>Pooled SD</i>
Prosocial behaviour	4.25	4.29	1.04	4.21	4.30	1.05
Emotion regulation	4.07	4.01	1.08	3.98	4.17	1.14
Learning behaviour	2.56	2.53	.44	2.50	2.50	.46
Inattention	1.74	1.78	.76	1.79	1.76	.79
Hyperactivity	1.73	1.76	.77	1.76	1.68	.80
Oppositional behaviour	1.80	1.87	.93	1.91	1.83	.96
Physical aggression	1.60	1.72	.96	1.63	1.61	.86
Peer problems	1.27	1.35	.52	1.24	1.26	.35
Withdrawn behaviour	1.95	1.91	.86	1.94	1.84	.83

TABLE 2
Correlations among child behaviours at pre-intervention

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
1 Prosocial behaviour								
2 Emotion regulation	.80							
3 Learning behaviour	.64	.56						
4 Inattention	-.62	-.59	-.78					
5 Hyperactivity	-.55	-.56	-.53	.83				
6 Oppositional behaviour	-.68	-.68	-.49	.66	.75			
7 Physical aggression	-.59	-.60	-.40	.58	.71	.86		
8 Peer problems	-.43	-.35	-.49	.41	.25	.37	.34	
9 Withdrawn behaviour	-.60	-.54	-.59	.45	.22	.37	.25	.57

Note: All correlations are statistically significant ($p < .001$).

(Bierman, Domitrovich et al., 2008). Sample items were “Avoids playing with other children” and “Sad, unhappy.” All items were rated on a 6-point Likert scale, with response options ranging from almost never to almost always ($\alpha = .81$).

RESULTS

Analyses were conducted in two stages. First, intervention effects of PATHS were estimated for the complete sample. Second, relatively higher and lower risk children within the sample were identified, and intervention effects within each of those subgroups were tested.¹

Means and standard deviations of all child behaviours are presented in Table 1, separately by intervention condition. There were no statistically significant differences between intervention and control groups at pre-intervention. Correlations among child behaviours at the pre-intervention assessment are presented in Table 2. All intervention effects are summarised in Table 3.

Missing data

Of the 568 children who participated in evaluating the effectiveness of PATHS, 546 children (96% of the sample) had complete post-intervention assessments. Full-information maximum likelihood estimation procedures were used to allow the 22 children with pre-intervention assessments but missing outcome data (4% of the sample) to contribute to all analyses and reduce bias (Widaman, 2006).

PATHS intervention effects

In the first stage of data analyses, hierarchical linear models, nesting children within classrooms, were estimated to determine whether there were statistically significant intervention effects on the nine outcomes for children in PATHS classrooms, compared with children in usual practice classrooms.¹ These models included random intercepts but assumed fixed effects of all independent

¹All analyses were also conducted with a three-level model, nesting children within classrooms and classrooms within schools. For eight of the nine outcomes included in the study, the variance at the school level was non-significant, with intraclass correlation coefficients ranging from .02 to .06. For the other outcome (withdrawn behavior), the variance at the school level was marginally statistically significant ($p < .10$), with an intraclass correlation coefficient of .10. However, accounting for the variance at the school level did not change the parameter estimate of the treatment effect, which remained $-.10$ ($p = ns$).

TABLE 3
Intervention effects (Cohen's *d*) for complete sample and subgroups

	<i>Complete sample (N = 568)</i>	<i>Higher risk children (n = 233)</i>	<i>Lower risk children (n = 335)</i>
Prosocial behaviour	.16	.09	.35*
Emotion regulation	.18†	.06	.38**
Learning behaviour	.06	-.11	.25*
Inattention	-.07	.06	-.22*
Hyperactivity	-.12	-.07	-.24*
Oppositional behaviour	-.12	-.02	-.33**
Physical aggression	-.11	-.01	-.29*
Peer problems	.00	.12	-.10
Withdrawn behaviour	-.09	.06	-.26†

† $p < .10$; * $p < .05$; ** $p < .01$.

variables on the outcomes. In each of these models, the pre-intervention level of functioning on the outcome and child sex was included as covariates. All outcomes were standardised so that intervention effects are comparable with Cohen's *d* (Cohen, 1977) and represent the difference between the intervention and control group means, divided by the pooled standard deviation, adjusted for the pre-intervention level of functioning and child sex.

In the complete sample, teachers reported that children in PATHS classrooms, compared with children in usual practice classrooms, showed a marginally statistically significant ($p < .10$) greater improvement in emotion regulation from the middle of first grade to the end of second grade. An intervention effect of this magnitude, $d = .18$, represents almost one-fifth of a standard deviation and would be considered small (Cohen, 1977). There were no other statistically significant differences between intervention and control group children.²

PATHS intervention effects for higher and lower risk children

In the second stage of data analysis, relatively higher and lower risk children were identified. Each of the child behaviours was dichotomized to specify whether a child was above or below average in terms of her or his functioning at the pre-intervention assessment. Latent class analysis (Collins & Lanza, 2010) was used to assess the likelihood that each child's pattern of dichotomous scores was indicative of being relatively higher or lower risk.

In this analysis, 233 children (41% of sample) had the highest probability (.96 on average) of belonging to the higher risk subgroup and a lower probability (.04 on average) of belonging to the lower risk subgroup. These children were most likely to have below average scores on the three positive behaviours (prosocial behaviour, emotion regulation and learning behaviour) and above average scores on the six negative behaviours (inattention,

hyperactivity, oppositional behaviour, physical aggression, peer problems and withdrawn/depressed behaviour). The remaining 335 children (59% of sample) had the highest probability (.98 on average) of belonging to the lower risk subgroup and a lower probability (.02 on average) of belonging to the higher risk subgroup. These children were most likely to have above average scores on the three positive behaviours and below average scores on the six negative behaviours.

Hierarchical linear models, nesting children within classrooms, were used to examine intervention effects within each subgroup; once again, the pre-intervention level of functioning on the outcome and child sex was included as covariates. Among the higher risk children, there were no statistically significant intervention effects.

In contrast, among the lower risk children, there were statistically significant differences on virtually all outcomes. As presented in Table 3, among this subgroup, children who had participated in PATHS, compared with children who had been in the usual practice control condition classrooms, were more likely to exhibit higher levels of prosocial behaviour, ($d = .35$, $p < .05$), emotion regulation ($d = .38$, $p < .01$) and learning behaviour ($d = .25$, $p < .05$) and lower levels of inattention ($d = [-.22]$, $p < .05$), hyperactivity ($d = [-.24]$, $p < .05$), oppositional behaviour ($d = [-.33]$, $p < .01$) and physical aggression ($d = [-.29]$, $p < .05$). There was a marginally statistically significant difference in lower withdrawn/depressed behaviour ($d = [-.26]$, $p < .10$). Intervention effects of this magnitude would be considered small to moderate (Cohen, 1977).

DISCUSSION

This study represents the first full-scale randomised-controlled trial of an SEL curriculum implemented in Croatian schools. This study found

²A multivariate analysis of covariance, which did not account for the nesting of children within classrooms but could take advantage of the pattern of findings across outcomes, produced a marginally statistically significant ($p < .10$) omnibus test of differences between intervention and control group children.

only one marginally statistically significant main effect of intervention, with students in PATHS classrooms showing greater gains in emotion regulation. Although the group means almost always favoured the PATHS classrooms, intervention differences were too small and the variability across the complete sample was too great for other statistically significant effects to emerge.

When the sample was divided into subgroups of relatively higher and lower risk children, based on pre-intervention patterns of behaviour, it became clear that PATHS was effective for lower risk children across almost all positive and negative outcomes. Within this subgroup, there were small- to moderate-sized statistically significant intervention effects on eight of the nine child behaviours.

Differential intervention effects

As in some previous trials, most intervention effects were shown among subgroups. The one exception to this pattern was the group difference on emotion regulation. The PATHS curriculum devotes considerable time to helping children identify positive and negative emotions, communicate with others about how they feel and calm themselves down when upset or aroused (Kusché & Greenberg, 1994). Out of necessity, many teachers may work with their children on reducing negative behaviours; however, the explicit focus of PATHS on emotion regulation may be unique in Croatian schools.

Higher risk children

It was disappointing there were no PATHS intervention effects within the subgroup of higher risk children (41% of sample). It may be that assessing impact at post-intervention only did not allow sufficient time for intervention effects to emerge. In previous trials of PATHS, intervention effects on aggression and hyperactivity were not evident until the follow-up assessments (Conduct Problems Prevention Research Group, 2010; Crean & Johnson, 2013; Malti et al., 2011). It might take more time for the higher risk children to consolidate and practice their new skills. It might take more time for those children to change their reputations and be viewed more accurately by their teachers and peers. Or, it might be that PATHS helps the higher risk children from getting worse and that intervention effects only appear as the control children continue to deteriorate (Patterson, Reid, & Dishion, 1992).

It also may be that a universal preventive intervention was insufficient to address the multi-faceted needs of these children. For higher risk children, universal preventive interventions serve as the foundation for other services (Brown-Chidsey & Steege, 2011). To thrive, these children may need coordinated universal and

selective preventive interventions (Institute of Medicine, 1994). A universal preventive intervention can introduce new material and a common language and expectations within the classroom. A selective preventive intervention can then target those specific skills that remain underdeveloped in some children. The extra pull-out sessions of the selective preventive intervention provide more opportunities for individualised instruction and frequent practice. However, by starting with the universal preventive intervention, the teacher and classmates can support the higher risk children as they attempt to their new skills from those pull-out sessions in the broader classroom context. This was the theoretical rationale behind Fast Track (Conduct Problems Prevention Research Group, 1992) in which all children received PATHS and higher risk children received additional intervention services to promote social-emotional functioning. Some teachers in Croatia spontaneously mentioned that higher risk children might benefit more if parents also received services so that children were being reinforced for the same PATHS skills at school and at home.

Lower risk children

Despite the absence of intervention effects for higher risk children, there were intervention effects on virtually all behaviours within the subgroup of lower risk children (59% of sample). This is in contrast to other PATHS trials in which effects were usually found among higher risk children (e.g., Bierman, Nix et al., 2008; Hacker et al., 2007; Malti et al., 2011). The unusual pattern in this study might be due to the fact that SEL is relatively new to Croatian schools. Perhaps, the lower risk children were able to assimilate the new SEL strategies more quickly.

It is important to note, however, that the lower risk children were not necessarily free of all problems. A child who had limited and specific problems still might be classified as lower risk. Whereas, all the lower risk children may have had the capacity to use what they were learning in PATHS in their own lives, only some of these children might have the consistent need to do so. Adding to the quantification of risk and targeting of interventions, Rose (1981) described Prevention Paradox that states it is worthwhile to invest in universal prevention as majority of total disorders come from low risk population. Benefits in lower risk children could lead to public health impact and societal gain from universal programs.

Changing teaching practices and classroom cultures

In many ways, PATHS is at odds with the traditional autocratic classroom culture in Croatia. PATHS coaches noted that teachers often seemed to perceive children with social-emotional problems as demanding and in need of

stern discipline. They were kinder and more engaged with the children without such problems.

PATHS, however, emphasised that teachers adopt the more child-focused practices that characterise effective SEL with all children. Rather than relying on exclusion and punishment to change children's behaviours, teachers were taught to use induction strategies to help children learn to control their behaviours. If teachers use a punishing tone of voice to demand that children employ PATHS strategies to calm down, the strategies are unlikely to work and may even backfire. Instead, teachers must gently prompt and warmly support the use of such strategies.

It is relatively easy to learn to deliver the individual PATHS lessons. It is much more challenging to create a positive classroom that helps children in the generalisation of new SEL skills across the school day. In this context, the higher risk children might have been more dependent on the scaffolding that teachers were still learning to do well. In contrast, the lower risk children required less scaffolding and could benefit the most.

Study limitations

Despite its strengths, certain factors qualified the findings in this study. First, classroom teachers responsible for implementing the PATHS curriculum also completed the ratings of child behaviours. It is unclear how much children would benefit if it were only teachers' perceptions of their behaviours that changed and not the behaviours themselves. This study would have been stronger with more objective measures of children's functioning. Second, the high correlations among those ratings of child behaviours may have created some redundancy in findings. Third, this study did not include any long-term follow-up. Intervention effects could become stronger or weaker in time. Fourth, in contrast to study hypotheses, this study did not find positive benefits for all children. Rather the benefits were primarily for children who were lower risk at pre-intervention. The subgroup analyses take advantage of this PATHS trial to inform future preventive interventions. However, these findings will warrant greater confidence once replicated. Fifth, it is unclear whether the pattern of findings in this study is due to specific adaptation of PATHS or the different context in the schools in Croatia. It is important to match a preventive intervention with the specific needs and capacity of each new context or setting. When multiple factors change at once, it is difficult to tease them apart. That is one reason why there is such a critical need for more cross-cultural research.

Conclusions and clinical implications

Croatia is a country in transition. There is recognition of the need to change the education system to better meet the

needs of children, and there is small but growing support to integrate SEL with more traditional academics.

This study examined the implementation of an SEL curriculum within that socio-political context. This study found large and positive effects of PATHS for some children. As schools supplement this universal preventive intervention with selective preventive interventions and as teachers gain more experience in conducting PATHS lessons and supporting the generalisation of skills across the school day, even more children may benefit.

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