

# A pilot evaluation of the *Positive Action* prekindergarten lessons

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There is a definite need for effective intervention programmes that address the social–emotional, character and healthy development of preschool children. Strong social-emotional skills are necessary for successful transitions to formal schooling and for healthy developmental trajectories. The *Positive Action (PA)* programme has a long history of effectiveness in schools (K-12) and communities, but has only recently developed lessons for preschool settings. The current study reports the results of the first evaluation of these lessons. Children were randomly assigned to classrooms/instructors who had previously decided to offer *PA* lessons or not. Instructors in both *PA* and control classrooms rated children's behaviour at pretest and immediate post-test. Results suggest that the *PA* prekindergarten lessons are effective at improving children's skills and behaviours across all of the domains that the programme addresses.

Keywords: social-emotional development; prekindergarten; intervention

Recent years have seen increased interest in early interventions with preschool children that focus on a variety of outcomes, including preparing children for school, promoting social–emotional, character and healthy development, and preventing the early onset of conduct problems. These interests have developed because poor behavioural patterns and deficits in social–emotional skills acquired in the preschool years tend to lead to expulsion from preschool (Gilliam, 2005), become more stable over time (Cole, Teti, & Zahn-Waxler, 2003; Moffitt & Caspi, 2001), contribute to the development of subsequent behavioural problems (Linares et al., 2005; Ramey & Ramey, 2004; Rhoades, Warren, Domitrovich, & Greenberg, 2010; Webster-Stratton & Taylor, 2001), and predict long-term academic difficulties (Blum & Libbey, 2004).

Several recently developed preschool programmes have demonstrated short-term effects on improved social–emotional skills and school readiness (Bierman et al., 2008; Domitrovich, Cortes, & Greenberg, 2007; Stefan & Miclea, 2010). In lieu of these new programmes, the developers of *Positive Action (PA)*, a comprehensive social–emotional learning and health promotion programme, extended the curriculum downward to include preschool-aged children. The elementary and middle school-based components have been evaluated in multiple quasi-experimental (Flay & Allred, 2003; Flay, Allred,

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& Ordway, 2001) and randomised trials (Beets et al., 2009; Lewis et al., 2013; Li et al., 2011; Washburn et al., 2011). These evaluations have demonstrated the effectiveness of the programme for a wide range of child- and school-level outcomes (see Flay & Allred, 2010 for a summary of findings). The current study reports results from the first randomised trial of the *PA* preschool-based (*PA* Pre-K) lessons.

# Social-emotional development, school readiness and subsequent outcomes

Social-emotional skills have received increased attention in recent years as important indicators of peer and family relationships (Rubin, Bukowksi, & Parker, 1998), positive adjustment and mental health (Luecken, Roubinov, & Tanaka, 2013) and academic success (Ladd, Birch, & Buhs, 1999) across the lifespan. Social-emotional skills begin developing in infancy; however, the early childhood years are an important and critical period in which rapid brain development occurs and allows for maturation in cognitive, social, emotional and behavioural competencies (Diamond, 2002). These competencies in the early childhood period are particularly important for successful transitions to kindergarten and long-term academic success and well-being. Children who do not enter kindergarten with the social and behavioural skills needed for learning often struggle with engaging in prosocial behaviours and participating positively and actively in classroom activities (Ladd, Herald, & Kochel, 2006; Thompson & Raikes, 2007). These difficulties can compromise children's abilities to take advantage of learning opportunities in the classroom and to develop the positive peer and teacher relationships they need for healthy development. Indeed, young children's socialemotional skills, such as engaging in prosocial behaviours, regulating emotions and behaviours, and following instructions predict elementary, middle and high school academic achievement (Breslau et al., 2009; Duckworth, Quinn, & Tsukayama, 2012; McClelland, Acock, & Morrison, 2006) and college completion (McClelland, Acock, Piccinin, Rhea, & Stallings, 2013).

Because of the predictive nature of social–emotional skills for achievement, some educators suggest they are necessary to meet the Common Core standards (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010) that the majority of states have now adopted. For example, a recent national survey indicated that the majority of teachers (preschool–high school) believe that the development of strong social–emotional skills is beneficial for children from all backgrounds in a variety of domains and that explicit instruction of these skills should be included in classroom curricula (Bridgeland, Bruce, & Hariharan, 2013).

In addition to the direct effects of social–emotional development on children's behaviour and academic achievement, these skills also play a role in the prevention of a range of problems that can persist into adulthood. For example, studies suggest that strong levels of social–emotional skills reduce behavioural and conduct disorders (Payton et al., 2008), alcohol and drug abuse (Flay & Allred, 2003; Lewis et al., 2012) and aggressive and violent tendencies (Beets et al., 2009; Lewis et al., 2013). Moreover, the development of these skills and others related to character development has been related to reductions in bullying (Lewis et al., 2013), which is a critical problem in the USA (Snell, MacKenzie, & Frey, 2002).

Although social—emotional skill development is an important component of school readiness, other skills are also critical. For example, children must demonstrate strong self-control/impulse control and behaviour management to succeed in classroom contexts. Several studies suggest that self-control is related to preschool academic

achievement and beyond (Fuhs, Wyant, & Day, 2011; Schmitt, Finders, & McClelland, 2014). Moreover, physical and intellectual health are important indicators of school readiness. Indeed, optimal health is absolutely critical for learning (Novello, Degraw, & Kleinman, 1992). Given the benefits and preventive nature of developing a comprehensive set of school readiness skills in the early childhood period, it has become critical that effective programmes and interventions are available that promote these competencies prior to kindergarten entry.

#### **Intervention research**

The large majority of children (83%) in the USA attend early care and education programmes, making preschool an important context for facilitating growth in socialemotional development (Denton Flanagan & McPhee, 2009). Preschool interventions aimed at improving these skills are growing as mechanisms for promoting healthy developmental trajectories and preventing subsequent academic and behavioural problems. Many of these programmes are showing substantive effects on children's social-emotional development, indicating that young preschool children can benefit from intervention (Bierman et al., 2008; Domitrovich et al., 2007; Hamre, Pianta, Mashburn, & Downer, 2012; Stefan & Miclea, 2010, 2013). For example, randomised controlled trials of the PATHS preschool curriculum have indicated positive effects on preschool children's social competence and emotion knowledge (Domitrovich et al., 2007; Hamre et al., 2012). Similarly, the Social-Emotional Prevention Program has been effective in increasing young children's social problem solving strategies, emotion recognition and competencies (e.g. sharing, positive negotiations; Stefan & Miclea, 2013). Although these interventions have shown substantive effects, their focus has been primarily on socialemotional skills and in some cases pre-academic skills, rather than on a comprehensive set of school readiness skills including physical and intellectual health. In the current study, we evaluated the recently developed preschool curriculum that was adapted from the empirically established PA programme. The PA curriculum is composed of a series of daily lessons that teach children how to engage in positive behaviours/actions for all areas of the self (physical, intellectual, social and emotional). As such, the PA programme teaches the prerequisite skills for taking advantage of learning opportunities in classroom contexts and sets the stage for a healthy developmental trajectory.

#### The PA programme

The *PA* programme has been previously evaluated as a comprehensive, school-based programme that focuses on social–emotional learning and health promotion. The programme utilises a positive youth development framework such that the primary focus is on promoting and strengthening positive behaviours, thus taking an asset-building approach to intervention and prevention. This is in contrast to many other school-based programmes that take a more risk-based, problem-focused approach, where the focus lies heavily in the prevention of specific risk-related behaviours (e.g. substance abuse prevention). Extant literature indicates the efficacy of *PA* for a variety of child outcomes, including short- and long-term academic achievement (Bavarian et al., 2013; Flay et al., 2001; Flay & Allred, 2003), prosocial behavioural trajectories (Lewis et al., 2012; Washburn et al., 2011) and emotional health (Lewis et al., 2013). The programme also shows promise in reducing negative outcomes, including substance abuse, violence, bullying behaviours and conduct problems (Beets et al.,

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2009; Flay & Allred, 2003; Lewis et al., 2013; Li et al., 2011). Moreover, a recent study reported that elementary school quality (e.g. school safety, student, parent and teacher involvement, quality student support, standards-based learning) was significantly improved through the programme (Snyder, Vuchinich, Acock, Washburn, & Flay, 2012). Given these beneficial and preventive effects, and a recent focus at the local and federal level on the importance of high quality preschool programmes with integrated social—emotional components (Jones & Bouffard, 2012), the *PA* creators developed a curriculum designed for preschool classrooms.

# **Current study**

Using a randomised controlled design, the current study investigated the effects of the PA Pre-K curriculum in improving children's school readiness. It is important to note that in this first randomised trial, the primary goal was to obtain an initial evaluation of the new prekindergarten lessons; thus, only the school-based component was implemented and evaluated. The programme features 130 lessons implemented by teachers over the complete school year that aim to improve self-concept, intellectual and physical health, self-control (i.e., impulsivity), self-management (i.e. follows directions; uses free time in appropriate ways), respect and consideration for others, social bonding, honesty with self and others and self-improvement. These lessons were modified by PA developers from the elementary school PA programme in a variety of ways to ensure age-appropriateness. For example, given developmental differences in attention, the PA Pre-K lessons are shorter. Furthermore, the Pre-K lessons include many more visuals and hands-on experiences, such as fun and engaging characters (e.g. puppets named Squeak and Mimi), stories, music and rhymes. We hypothesised that children who participated in the programme would demonstrate greater gains in their social-emotional skills compared to children in the control group.

#### Method

# **Participants**

The PA Pre-K lessons were evaluated in a convenience sample of three preschools in Virginia during the fall of 2009. Twelve classrooms/instructors (all female) agreed to participate in the study, seven of whom agreed to offer the programme, based primarily on scheduling. At each site, children were randomly assigned to classrooms/instructors. On average, there were 15 children per class. Fifty-four percent of the children were male.

## Procedure

A quasi-experimental design was utilised to evaluate the *PA* Pre-K programme such that although teachers self-selected into programme delivery or business-as-usual, children were randomly assigned to a classroom instructor (either *PA* or 'business-as-usual' control). Classroom instructors completed web-based ratings of the children in their classrooms both before (pretest in September) and after (post-test December–January) they provided a condensed version (60 lessons over 10 weeks) of the *PA* Pre-K programme. At pretest, 12 instructors (7 *PA* and 5 controls) from three sites rated children; at post-test, 11 instructors (6 *PA* and 5 controls) from two sites rated children. For the current analysis, only those children rated at both times were

considered (N = 135; 80 PA children and 55 control from 6 PA classes and 5 control classes). The instructors who rated these children implemented the programme lessons faithfully for the full duration of the evaluation (see results below). De-identified data were provided to the authors for this analysis.

#### Intervention

Over the course of 10 weeks, teachers in the PA classrooms implemented 60, 10–15minute daily scripted lessons that were integrated into the daily curriculum. The lessons were based on six units: Unit 1: understanding of PA and self-concept; Unit 2: physical health and intellectual health; Unit 3: self-management and self-control; Unit 4: respectful of others, considerate of others, and social bonding; Unit 5: honesty with self and others; Unit 6: self-improvement (see Table 1 for an overview of unit themes and goals). Lessons utilised a variety of age-appropriate strategies and methodologies (e.g. puppets, manipulatives, games, music, stories; Allred, 2009). For example, a lesson in Unit 2 (physical and intellectual health) uses song to reinforce the positive action of eating healthy foods. Children are taught the following lyrics to the melody of London Bridges: Healthy eating helps me grow, helps me grow, helps me grow, Healthy eating helps me grow, every single day! In addition, the PA Food Guide Pyramid poster is used during this lesson as a colorful and fun depiction of healthy versus unhealthy foods. Another example of a lesson from Unit 4 (respectful of others, considerate of others and social bonding) includes a story about sharing and a finger play where the children repeat these words and actions after the teacher: I will share with you my good thoughts (point to head). I will share with you my good words (point to mouth). You are important to me (point to another person, then at yourself). I will share with you (touch the heart). I will share with you my

Table 1. Overview of PA unit themes.

| Unit 1 | Philosophy and thoughts–actions–feelings circle Introduction to the <i>PA</i> intuitive philosophy                  |
|--------|---|
|        | Discussion of differences between negative and PAs<br>A review self-concept and the role of self, peers, and family |
| Unit 2 | Physical and intellectual PAs   |
|        | Identification of and practice in physical PAs (exercising, healthy eating,   |
|        | dental hygiene, getting enough sleep, etc.)   |
|        | Identification of and practice in intellectual PAs (making good decisions, being                                    |
|        | motivated to learn, problem-solving, valuing learning, etc.)  |
| Unit 3 | Managing yourself using social and emotional PAs  |
|        | Identification of personal resources  |
|        | Understanding that how we manage ourselves is a choice  |
|        | Strategies for managing thoughts, actions, feelings, energy, etc.   |
| Unit 4 | Getting along with others using social and emotional PAs  |
|        | How to treat others respectfully, cooperate, avoid bullying and show  |
|        | appreciation, empathy, fairness and kindness  |
| Unit 5 | Being honest with yourself and others using social and emotional PAs  |
|        | Discussion of the importance of telling the truth   |
|        | Defining self-honesty   |
|        | Strategies for honesty and accepting responsibility for actions   |
| Unit 6 | Improving yourself continually using social and emotional positive  |
| 0 0    | Helping children set physical, intellectual, social and emotional goals   |
|        | Reinforcing all PA concepts   |
|        |   |

sweet things (cup hands in front of heart). I will share with you my toys (pat hands). You are important to me (point at another person, then at yourself). I will share with you (touch the heart). For a more comprehensive description of the lessons, see the *PA* website (https://www.positiveaction.net/) or instructor's manual (Allred, 2009).

#### Measures

The student rating scale consisted of 33 items assessing 11 different domains addressed by the *PA* programme (see Appendix for a listing of items by domain). For each item, the instructor was asked to rate how much the item described the child's behaviour on a seven-point scale from not at all to totally. An example of an item from the self-control scale is: 'Can be impulsive, throw temper tantrums, be disruptive in class,' and an example from the self-management scale is: 'Uses free time in an acceptable way.' A mean score was calculated for each scale and the total (all 33 items) by taking the average of the items (3 per scale) so that all scores ranged from 1 to 7. The responses for three negatively worded items were reversed before calculating the average, so that higher scores on all scales represented better behaviour. The scales representing the 11 domains of the *PA* programme had reliability coefficients between 0.76 and 0.93, with the total scale alpha being 0.98.

In recent studies, items similar to those in this scale were used to create a set of self-report scales for children to rate their self-control, prosocial behaviour, honesty, self-development and respect. Validity analyses for children in grades 3–5 and grades 7–8 demonstrated expected correlations with a wide variety of outcomes including, but not limited to, engagement/disaffection with learning, school orientation, affiliation with good or deviant peers, moral beliefs aggressive or competent problem solving, altruistic behaviour, positive affect, self-esteem, life satisfaction, positive health behaviours, negative behaviours (e.g. substance use, violence), anxiety and depression, social competence and academic achievement (Flay, 2012; Ji, DuBois, & Flay, in press). As expected from developmental theory, these correlations increased as children got older (generally from the 0.20°s to the 0.30°s) possibly because the accuracy of their self-appraisals improved (Denham, Wyatt, Bassett, Echevrria, & Knox, 2009).

# Fidelity of implementation assessment

At post-test, instructors reported how many lessons each child received as a measure of implementation. Instructors also reported on how engaged each child was in the classroom activities, and how much they thought each child discussed the programme outside of the classroom, including with their parents. Instructors also rated how much they (the instructors) talked about *PA* with the parents of each of the participating children. Each of these items was answered on a six-point scale ranging from not at all to very much.

#### Results

# Effects of PA

Table 2 presents the reliability coefficients for each outcome scale, the mean scores on each scale and the total score by condition (control and *PA*) and time (pretest and posttest), together with calculated ANCOVA F-tests, and the Improvement Index (the expected change in percentile rank for an average child). As noted in Table 1, on

Table 2. Means on scale scores and total score by condition at pretest and post-test.

| ·           | Understand <i>PA</i> | Self-<br>concept | Physical<br>health | Intellect<br>health | Self-<br>manage | Self-<br>control | Respect | Considerate | Social bonding | Honesty | Self-<br>improve | TOTAL   |
|-------------|----------------------|------------------|--------------------|---------------------|-----------------|------------------|---------|-------------|----------------|---------|------------------|---------|
| Scale alpha | 0.93                 | 0.84             | 0.81               | 0.87                | 0.91            | 0.79             | 0.88    | 0.91        | 0.76           | 0.92    | 0.91             | 0.98    |
| Pretest     |                      |                  |                    |                     |                 |                  |         |             |                |         |                  |         |
| Control     | 3.20                 | 4.62             | 3.72               | 3.81                | 3.66            | 5.07             | 3.61    | 3.59        | 3.98           | 3.66    | 3.69             | 3.87    |
| PA          | 3.68                 | 4.77             | 4.23               | 4.14                | 4.10            | 5.14             | 4.11    | 4.08        | 4.35           | 4.09    | 4.07             | 4.24    |
| t-Test      | 0.00                 | 0.17             | 0.00               | 0.01                | 0.00            | 0.36             | 0.00    | 0.00        | 0.01           | 0.00    | 0.01             | 0.00    |
| Difference  | 0.47                 | 0.14             | 0.51               | 0.32                | 0.44            | 0.07             | 0.51    | 0.49        | 0.37           | 0.44    | 0.38             | 0.37    |
| Post-test   |                      |                  |                    |                     |                 |                  |         |             |                |         |                  |         |
| Control     | 3.33                 | 4.46             | 3.61               | 3.93                | 3.78            | 4.41             | 3.73    | 3.75        | 4.04           | 3.73    | 3.79             | 3.90    |
| PA          | 4.31                 | 5.13             | 4.60               | 4.70                | 4.58            | 5.29             | 4.64    | 4.65        | 4.86           | 4.60    | 4.63             | 4.73    |
| t-Test      | 0.00                 | 0.00             | 0.00               | 0.00                | 0.00            | 0.00             | 0.00    | 0.00        | 0.00           | 0.00    | 0.00             | 0.00    |
| Difference  | 0.98                 | 0.67             | 0.99               | 0.77                | 0.80            | 0.88             | 0.91    | 0.91        | 0.82           | 0.87    | 0.85             | 0.83    |
| ANCOVA      |                      |                  |                    |                     |                 |                  |         |             |                |         |                  |         |
| F-statistic | 19.96                | 24.13            | 28.69              | 16.84               | 10.75           | 17.45            | 13.47   | 16.29       | 20.96          | 12.24   | 15.77            | 26.25   |
| for         |                      |                  |                    |                     |                 |                  |         |             |                |         |                  |         |
| condition   |                      |                  |                    |                     |                 |                  |         |             |                |         |                  |         |
| F-test      | < 0.001              | < 0.001          | < 0.001            | < 0.001             | < 0.01          | < 0.001          | < 0.001 | < 0.001     | < 0.001        | < 0.001 | < 0.001          | < 0.001 |
| ES          | 0.47                 | 0.59             | 0.57               | 0.50                | 0.36            | 0.72             | 0.45    | 0.46        | 0.46           | 0.43    | 0.49             | 0.62    |
| II          | 0.18                 | 0.22             | 0.21               | 0.19                | 0.14            | 0.27             | 0.17    | 0.18        | 0.18           | 0.17    | 0.19             | 0.23    |

Note: ES, effect size; II, improvement index.

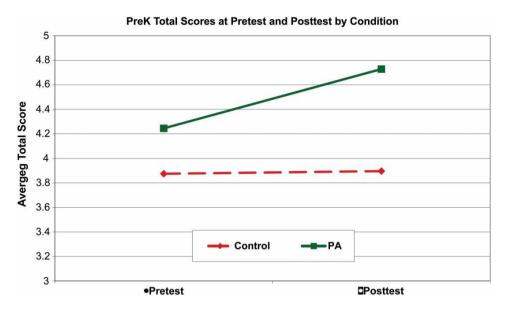


Figure 1. Total scores on outcome measure at pretest and post-test by condition.

average, PA children were rated significantly better on all scales and the total score at pretest – by an average of 0.37 points on the seven-point scale. However, PA children were rated an average of 0.83 points better than control children at post-test. ANCOVA of post-test scores by condition adjusting for pretest scores were statistically significant (p < 0.05) for all scales and the total score, indicating favourable programme effects.

On average, PA children were rated as improving by 0.48 points compared to only 0.02 points for control children (Figure 1). Furthermore, PA children were rated as improving on all scales, while control children's scores decreased on three of the scales (self-concept, physical health and self-control). As an example, the figure shows the significant improvement in PA children's ratings compared to the almost zero change in control children's ratings. The effect size for the total score was 0.62 standard deviations, with a range of 0.36 (self-management) to 0.72 (self-control); the improvement index for the total score was 23.2% with a range of 14.1% (self-management) to 26.4% (respect) for the scales.

#### Implementation results

Most (four of six) PA instructors reported that they delivered almost all of the lessons (50–60 lessons) to children in their classrooms; two reported delivering only two or three lessons per week. Children received an average (mean) of 4.8 (SD=1.7) lessons per week (for 10 weeks); the median number of lessons per week was 6. Instructors reported that children were very involved in the programme. On the six-point scale, children were reported to be highly engaged (M=4.0, SD=1.2) and talked about PA with their parents at a moderate level (M=3.9 on a six-point scale, SD=1.9 l). Instructors thought that children discussed PA outside of the classroom at a moderate level (M=3.2, SD=1.0). Instructors reported that parents discussed PA with them only a very little to a little (M=2.5, SD=1.4).

#### Discussion

The present study evaluated recently developed preschool lessons of the *PA* Pre-K programme using a quasi-experimental design. Results suggested that the *PA* Pre-K programme lessons are effective in improving children's skills and behaviours across a wide range of outcomes, including, self-concept, intellectual and physical health, self-control, self-management, respect and consideration for others, social bonding, honesty with self and others and self-improvement. Children exposed to *PA* lessons improved an average effect size of 0.62 standard deviations or an average improvement index of 23%. In addition, results indicated that teachers found programme implementation feasible and children were highly engaged.

The present findings are quite timely given recent emphasis on the critical nature of high-quality preschool experiences (Li, Farkas, Duncan, Burchinal, & Vandell, 2013) and the development of social-emotional skills and school readiness during the early childhood period (Jones & Bouffard, 2012). Children who struggle to develop social-emotional skills and other aspects of school readiness (e.g. physical health) in preschool are at risk for a range of negative outcomes and, thus, effective programmes and interventions targeting these skills are essential. The present evaluation suggests that the school-based PA Pre-K programme promotes the development of these critical skills prior to kindergarten entry. Moreover, findings suggested that children who did not receive the programme showed decreases on three scales: self-concept, physical health and self-control. Although the decreases in self-concept and physical health were miniscule, decreases in self-control were quite large. There is some evidence that attending centre-based preschool programmes can have detrimental effects on socio-behavioural skills (e.g. self-control; Loeb, Bridges, Bassok, Fuller, & Rumberger, 2007), which lends support for implementing effective programmes like PA in classroom contexts. Studies suggest that healthy physical, emotional, intellectual and social development are related to successful transitions into kindergarten, and longitudinal data indicate that school readiness is a key mechanism that shapes developmental trajectories (e.g. McClelland et al., 2006). Therefore, by facilitating the healthy development of these skills early on, children's developmental trajectories can be positively influenced and subsequent deleterious outcomes can be prevented.

Importantly, results of implementation fidelity analyses indicated that teachers delivered the lessons on a regular basis and implementation was feasible. In addition, children were highly engaged in the programme. These findings are of interest given a recent emphasis on the importance of including implementation measurement and evaluations in the intervention literature (Carroll et al., 2007). Many current evaluations lack measures of implementation, which can be problematic when assessing programme effectiveness and generalisability (O'Donnell, 2008). Because we utilised fidelity assessments to evaluate whether the programme was being implemented as expected, we can be confident that the programme effects are a result of participating in the lessons rather than some unaccounted for limitation in delivery.

#### Limitations

One main limitation of this study was that the assignment of classrooms/teachers to conditions was non-random. This was likely responsible for the significant pretest differences – with instructors assigned to deliver the programme rating children in their classroom better at pretest than instructors assigned to the control condition. This could have had the unfortunate effect of reducing the chances of detecting

effects of the programme; on the contrary, however, *PA* instructors clearly observed improvements in children, while control instructors did not observe such improvements. The random assignment of children to instructors was a major strength of this evaluation. As with all such studies, another limitation of this study was reliance on ratings of children's behaviour by the same people who delivered the intervention. Future studies might obtain ratings from other staff in the preschool as well as parents and independent observers.

An additional limitation of the current analysis was that demographic data (with the exception of gender) were not available. Therefore, we were unable to control for background characteristics. Because children were randomly assigned to classrooms, the chance for significant demographic differences between groups is rare; however, it will be important that future evaluations of the *PA* programme collect and include background information in models and group comparisons.

Finally, only one component (the classroom curriculum) of the *PA* programme was evaluated in this study. Although this facilitated a clean and clear indication that the school component was effective, future research should include the other components (family, community) as well to get a better picture of programme effectiveness when implemented comprehensively.

#### Conclusion

The current study provided the first empirical evaluation of the *PA* Pre-K programme. Findings indicated the preschool curriculum is an effective and feasible strategy for improving several developmental domains, including social–emotional skills, physical and intellectual health and character development in young children. Moreover, it is likely that the effects will be even greater in future implementations when all children within a preschool setting receive the *PA* lessons and the school-, family- and community-wide aspects of the programme are also implemented. The *PA* Pre-K programme promotes school readiness prior to kindergarten entry and can serve as an investment in healthy development across the lifespan.

#### **Notes on contributors**

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# Appendix

List of scale items

1 2 3 4 5 6 7 Not at all Somewhat Very much like this student like this student

# Unit 1: Understanding of PA

- 1. Has a good understanding of which behaviours are positive and which are negative
- Clearly understands that positive thoughts lead to positive actions, which lead to positive feelings about him/herself, which lead to more positive thoughts
- Clearly understands that negative thoughts lead to negative actions, which lead to negative feelings about him/herself, which lead to more negative thoughts

#### **Unit 1: Self-concept**

- 1. Feels good about him/herself when he/she does positive actions
- 2. Is generally happy, outgoing, optimistic, confident, feels good about him/herself
- 3. Is withdrawn, depressed/sad, unhappy, pessimistic, anxious/fearful

#### **Unit 2: Physical health**

- 1. Likes to eat healthy food and avoid unhealthy foods and substances
- 2. Likes to be clean (personal hygiene) and to clean teeth after eating
- 3. Likes to play actively, engage in physical activities/exercise

#### Unit 2: Intellectual health

- 1. Likes to learn
- 2. Can play by themselves (independently)
- 3. Can make good choices/decisions

#### Unit 3 and throughout: Self-management

- 1. Uses free time in an acceptable way
- 2. Looks after his/her possessions and respects others' possessions
- 3. Follows rules, accepts limits, cleans up his/her mess when asked

#### Unit 3 and throughout: Self-control

- 1. Shows self-control
- 2. Is a bully (harasses, teases) or violent (hit others, fights, etc.)
- 3. Can be impulsive, throw temper tantrums, be disruptive in class

# Unit 4 and throughout: Respect

- 1. Listens to adults and other kids without interrupting
- 2. Treats others with fairness, tolerant of differences in others
- 3. Can cooperate with others, can compromise when necessary

#### Unit 4 and throughout: Considerate

- 1. Is a good friend to others, is helpful to others who need it
- 2. Understands how others feel, shows empathy or sympathy, compliments others
- 3. Has good social skills with peers, can initiate conversation or play, is not bossy

#### Unit 4 and throughout: Social bonding

- 1. Likes to spend time with parents (and other adults outside of school)
- 2. Likes to be with teachers (and in school generally)
- 3. Is friendly with and sought out by peers, interacts well, inclusive of others, shares

#### **Unit 5: Honesty**

- Is honest with him/herself (does not blame others or make excuses), takes responsibility for his/her own actions
- 2. Tells the truth, does not lie or cheat
- 3. Is honest with others (does what they say they will do, keeps promises)

#### **Unit 6: Self-improvement**

- 1. Tries to be their best (can set small goals for themselves)
- 2. Likes to (and has the courage to) try new things
- 3. Persist in tasks, turns problems into challenges, receives suggestions