Effectiveness of the Roots of Empathy (ROE) Program in Preventing Aggression and Promoting Prosocial Behaviour: Results from a Cluster Randomized Controlled Trial in Manitoba

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**Background**
In Canada and internationally, bullying and violence are common in elementary and secondary schools. A recent Canadian study found high-levels of victimization (7.6 per cent) and bullying (6.1 per cent) among adolescents. Aggressive behaviour in elementary school children is associated with delinquency, substance abuse, peer rejection and school failure in adolescence. Previous intervention studies addressing aggressive behaviour, were based on smaller-scale models or demonstration programs.

**Research Objective**
Our objective was to determine the real-world effectiveness of the Roots of Empathy (ROE) program, as delivered under routine conditions of practice in rural, northern and urban Manitoba schools.

**Methods**
- We randomly assigned ROE to five of eight Manitoba school divisions, in kindergarten, Grade 4 and Grade 8 classrooms (n = 445 students).
- Schools in the remaining three school divisions served as a wait-list control group (n = 315 students) and, in the following year, as an ROE replication group (n = 285 students).
- Three child behaviour measures (physical aggression, indirect aggression, prosocial behaviour) from the National Longitudinal Survey of Children and Youth (NLSCY) were rated by teachers before the program, immediately after program completion, and followed up annually for three more years. Table 1 shows sample items for each child behaviour measure.
- Multi-level modelling was used to determine program effectiveness and to account for the study design’s nested structure. Level 1 included the individual growth trajectories to measure intraindividual change in behaviour scores over time. Level 2 included the child level variables—gender. Level 3 included class-level variables—program allocation and grade level.
- Interaction terms, between program allocation and time, were assessed for each behaviour. These analyses essentially controlled for many potential confounders because the interaction between Program and Time was within students. Any confounder would have to not only be different between groups, but also have a differential effect on change over time.

**Results**
- For boys and girls in all grade levels, ROE had statistically significant and replicated beneficial effects.
- Compared to the control group, the ROE group had reduced physical aggression, reduced indirect aggression, and increased prosocial behaviour immediately after program completion (Table 2).
- These beneficial outcomes were maintained or continued to improve across the three years following program completion (Table 3). Some of the gains in prosocial behaviour were lost in the follow-up period for kindergarten and Grade 8 children in the initial sample, but were maintained in the replication sample.

**Discussion**
- This study is one of the first to demonstrate that a school-based program to prevent aggression and promote prosocial behaviour in children and adolescents is effective when implemented on a larger scale under real-world conditions of community-based service delivery.
- ROE appears to achieve beneficial effects as previously demonstrated in smaller-scale models or demonstration programs (standardized effect size: 0.35).
- These results are compelling, given that beneficial effects were clearly found in both samples and that many of these effects were maintained or had continued to improve over time.

**Opportunity for Real-World Evaluation in Manitoba**
Manitoba’s Healthy Child Committee of Cabinet (HCCC) is comprised of eight ministers dedicated to the well-being of children and youth, from conception to age 18 years. To improve the social and emotional health of children, HCCC directed the Healthy Child Manitoba Office to implement and conduct a rigorous evaluation of the Roots of Empathy program in partnership with school divisions. Limited evidence of program effectiveness, limited program funding, and significant program demand from school divisions combined to provide the opportunity for using an evaluation design with random assignment, to determine whether larger-scale implementation was scientifically warranted. Based on convincing evidence of effectiveness from the evaluation, Manitoba has continued to expand Roots of Empathy, currently being implemented in 160 schools with ongoing monitoring of program fidelity and outcome.

**References**