

PATHS to Success: results of a randomised controlled trial of the Promoting Alternative Thinking Strategies curriculum

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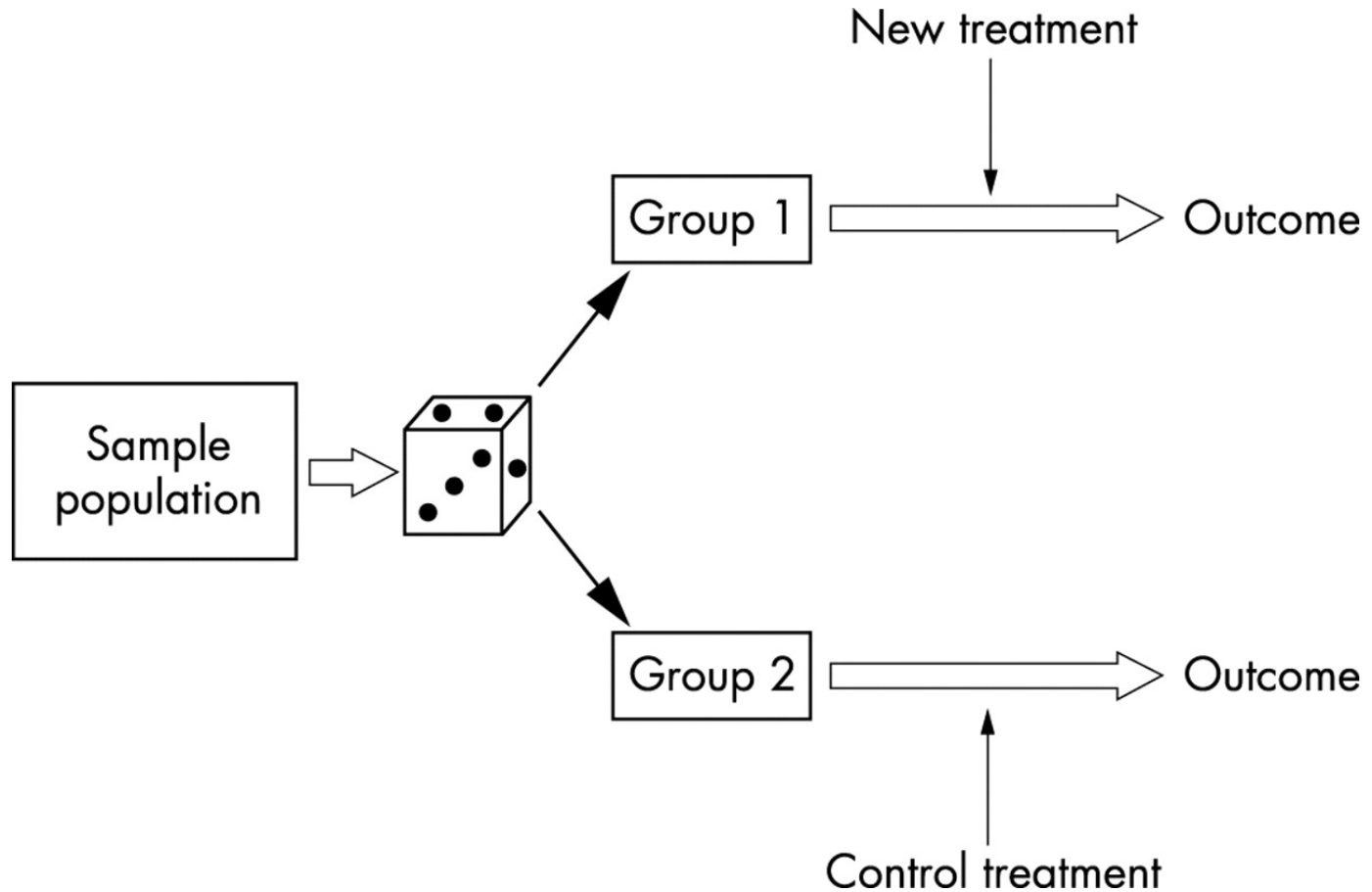
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Our research questions

- Does PATHS improve social-emotional and other outcomes for children in English primary schools?
- Are the effects of PATHS on children's outcomes sustained over 2 years?
- Does PATHS help children adjust to secondary school?
- Does *how* PATHS is implemented make a difference to outcomes?
- Do changes in children's social-emotional outcomes influence their later school outcomes?
- Does PATHS provide value for money?

Research design

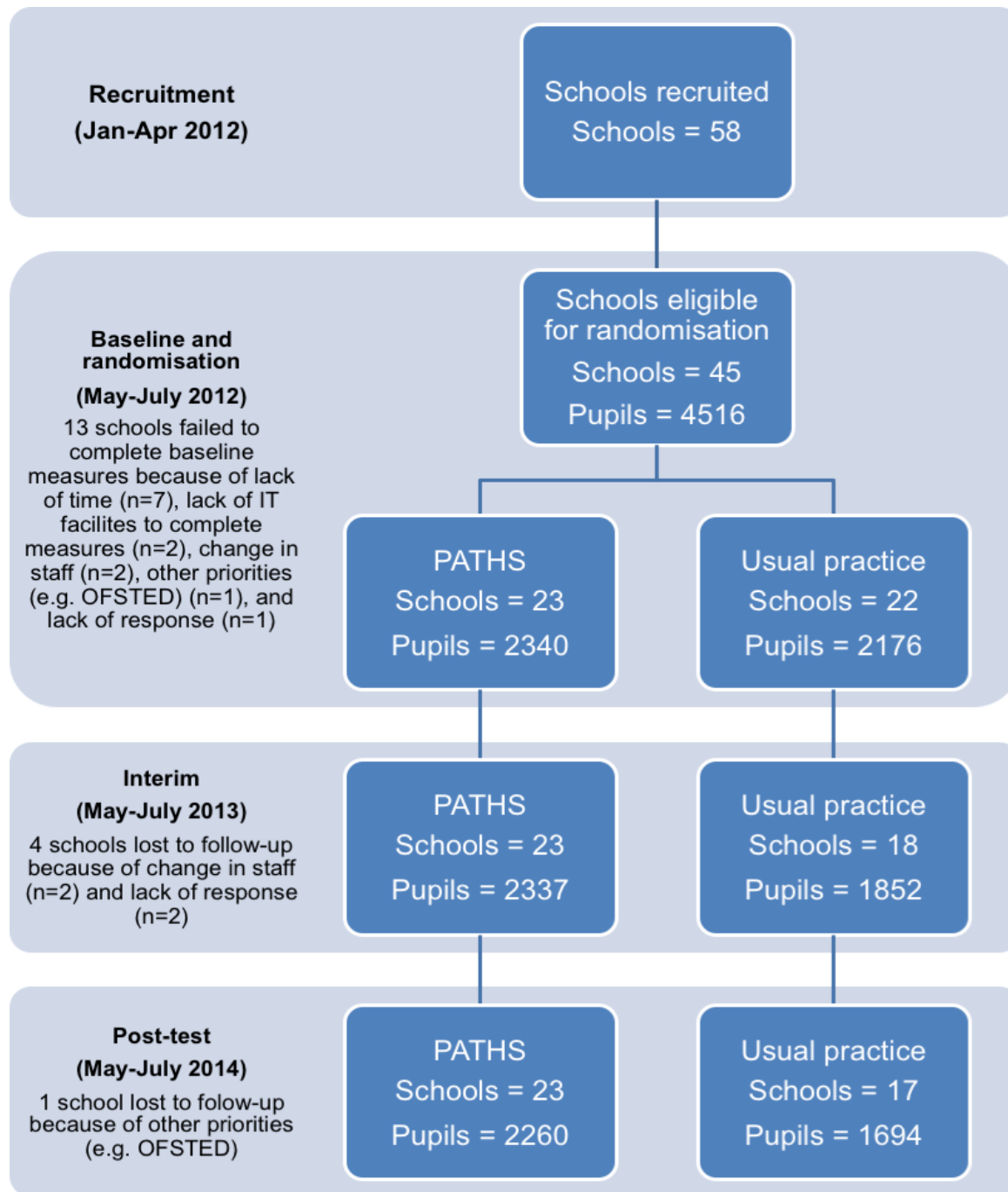


Research design

- 45 primary schools randomly allocated to intervention (PATHS) or control (usual practice) arms of trial
 - Balance between trial arms on school-level FSM and EAL
 - Children aged 7-9 (N=4,516) at baseline
 - Sample is nationally representative in terms of size, attendance and % of children with SEND, but larger than average % of FSM and EAL
- Treatment schools implementing PATHS for two years; control schools to continue usual practice
 - All teachers given one-day initial training and half-day follow-up training
 - Technical support and assistance provided by PATHS psychologists (modelling, team-teaching, lesson observation and feedback, email/phone support, in-house training, parent information workshops, attendance at school meetings, providing extra resources)

Research design

- Assessment of outcomes
 - Social-emotional competence and mental health (primary outcomes)
 - Health-related quality of life, school outcomes (e.g. attainment), adjustment to secondary school (secondary outcomes)
- Assessment of implementation
 - Structured observations and teacher surveys on implementation
 - Assessment of fidelity/adherence, dosage, quality, participant responsiveness, reach
 - School-level survey of usual practice
 - Universal and targeted SEL
 - Interviews and focus groups with range of stakeholders (e.g. children, teachers, parents, school leaders)
 - Teacher surveys covering implementer characteristics and factors affecting implementation



Outcomes analysis

- Two approaches to analysis
 - Overall impact of PATHS ('intention to treat')
 - Impact on children considered to be at-risk ('sub-group')
 - 'At risk' subgroups – those children scoring in the borderline/abnormal ranges of the given outcome measure (e.g. the SDQ) at baseline
- Multi-level modelling used as primary method of analysis
 - Takes into account the fact that our data is clustered (e.g. scores within a school will be correlated) and hierarchical (e.g. pupils within schools) in nature
 - 3 level models
 - Time (Baseline, post-test)
 - Child (Sex, FSM, risk status)
 - School (PATHS vs. Usual practice, FSM, EAL)

Outcomes analysis – social skills

Domain (SSIS)	Intention to treat (group*time)	Sub-group (group*risk*time)
Social skills (total)	0.003	0.004
Communication	0.043	-0.053
Co-operation	-0.007	-0.169*
Assertion	-0.008	0.179*
Responsibility	-0.001	0.119
Empathy	0.015	0.139
Engagement	0.025	0.202**
Self-control	0.005	0.153*

*p<.10 **p<.05

Domain (SECCI)	Intention to treat (group*time)
Social and emotional skills	0.327**

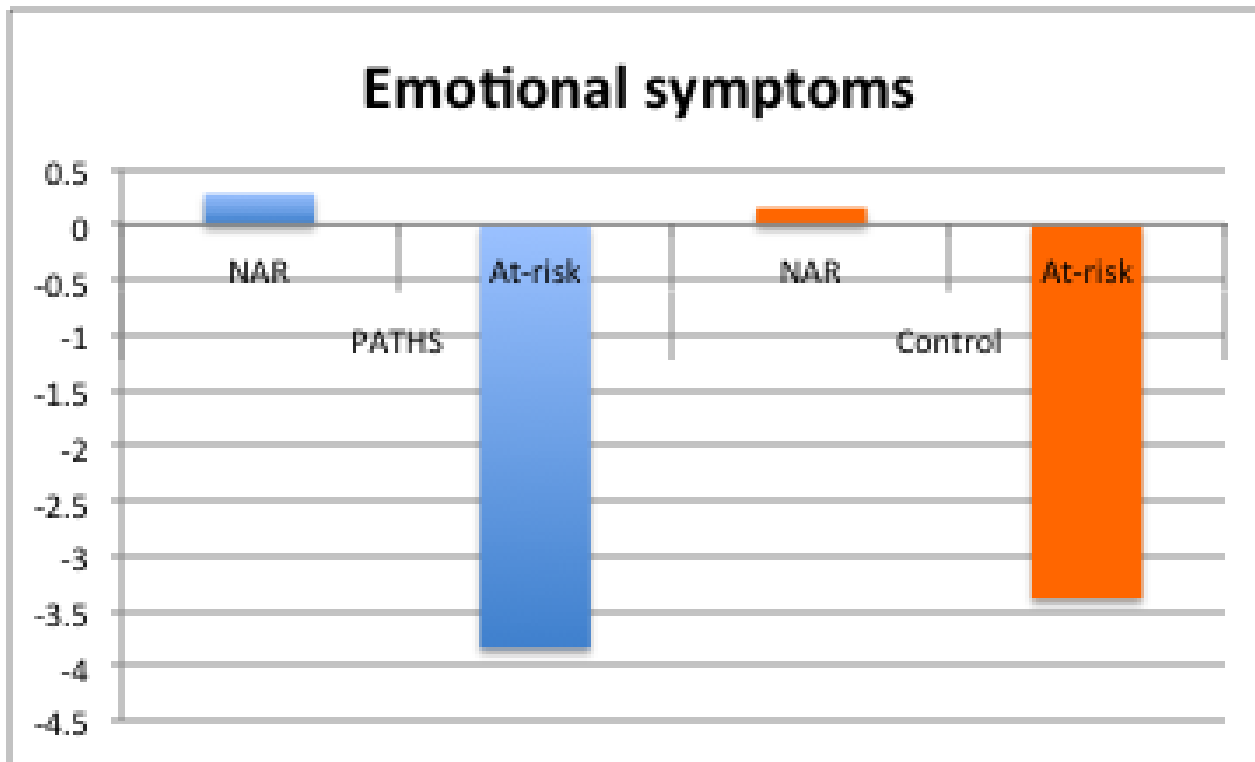
*p<.10 **p<.05

Outcomes analysis – mental health

Domain (SDQ)	Intention to treat (group*time)	Sub-group (group*risk*time)
Total difficulties	0.009	0.076
Emotional symptoms	0.052*	-0.246**
Conduct problems	-0.014	0.238**
Hyperactivity/inattention	0.010	0.001
Peer problems	0.064**	-0.091
Pro-social behaviour	0.036	0.124**

*p<.10 **p<.05

Outcomes analysis – mental health



Outcomes analysis – health-related quality of life

Domain (KS27)	Intention to treat (group*time)
Physical wellbeing	0.076*
Psychological wellbeing	0.007
Social support and peers	-0.005
School environment	-0.028

* $p < .10$ ** $p < .05$

Outcomes analysis – academic

Domain	Intention to treat (group*time)	Sub-group (group*risk*time)
Y6 English (SATs)	-0.106**	.120*
Y6 Maths (SATs)	-0.025	0.016
Y5 Reading (InCAS)	0.008	0.099
Y5 Maths (InCAS)	0.016	0.021

*p<.10 **p<.05

Outcomes analysis summary

- Mixed findings!
- Primary (intention to treat) effects found for teacher-rated social and emotional skills
 - Plus *marginal, non-significant trend* for child-rated physical wellbeing
- Secondary (sub-group) effects found for child-rated engagement and teacher-rated emotional symptoms and pro-social behaviour
 - Plus *marginal, non-significant trends* for child-rated assertion and self-control, and Y6 English SAT scores
- However, several analyses *favoured the control group*
 - Primary (intention to treat) effect for teacher-rated peer problems and Y6 English SAT scores
 - Secondary (sub-group) effect for conduct problems
 - Plus *marginal, non-significant trends* for teacher-rated emotional symptoms (ITT) and child-rated co-operation (sub-group)
- Effect sizes – the amount of change - in all cases were extremely modest
 - The only cases where ES exceeded 0.2 were for teacher-rated social and emotional skills, emotional symptoms, conduct problems and child-rated engagement

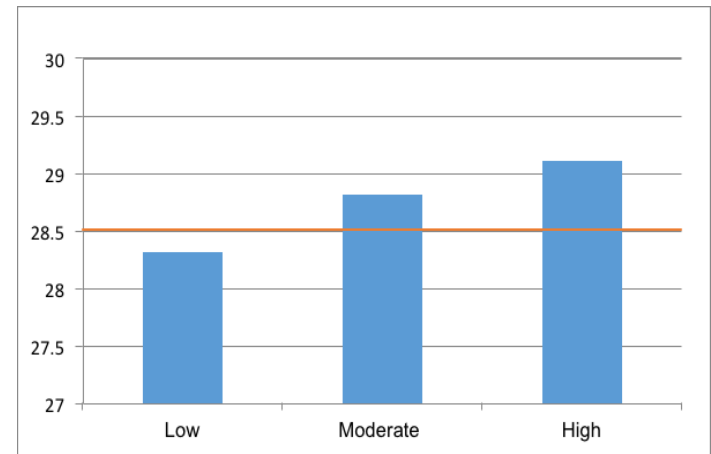
Implementation analysis

- Multi-level modelling used as primary method of analysis
 - Takes into account the fact that our data is clustered (e.g. scores within a school will be correlated) and hierarchical (e.g. pupils within schools) in nature
 - 4 level models
 - Time (Baseline, post-test)
 - Child (Sex, FSM)
 - Class/teacher (fidelity, dosage, quality, participant responsiveness, reach)
 - School (Universal SEL, targeted SEL, FSM, EAL)
- Initial summary statistics indicated that fidelity, quality, participant responsiveness and reach were all high. However, mean dosage scores indicated that classes were on average 20 lessons (10 weeks at 2 lessons per week) behind schedule at the point of observation
 - PATHS lessons were implemented well, but not at the frequency recommended



Implementation analysis - academic

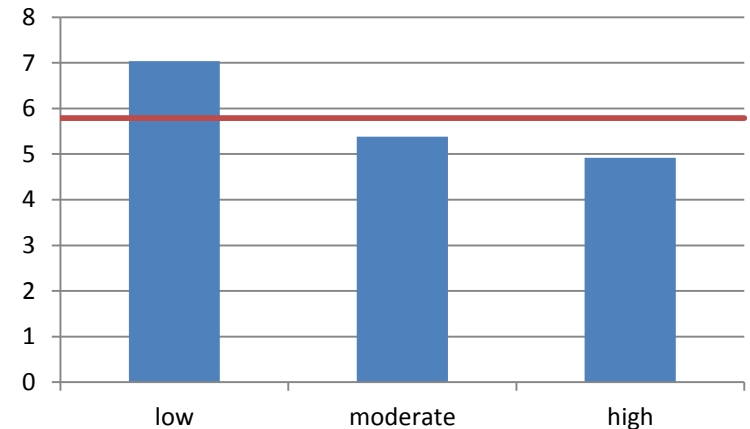
- Four models – Y5 Reading, Y5 Maths, Y6 English, Y6 Maths
- Several aspects of implementation were associated with improved academic outcomes in at least 2 models
 - Usual SEL practice at the targeted level
 - Quality
 - Reach
- That is, in classes where PATHS was delivered with higher levels of quality, to a greater proportion of children, and/or this was supplemented with more targeted SEL interventions for children in need of additional support, there were better academic outcomes
- Other aspects of implementation (e.g. fidelity, dosage) did not appear to make a difference to academic outcomes



**Year 6 English SAT scores and
PATHS implementation quality**

Implementation analysis – mental health

- 6 models – emotional symptoms, conduct problems, hyperactivity/inattention, pro-social behaviour, peer problems, total difficulties
- Several aspects of implementation were associated with reduced mental health difficulties in at least two models
 - Quality
 - Reach
- That is, in classes where PATHS was delivered with higher levels of quality and to a greater proportion of children, there were improved mental health outcomes
- Contrary to our initial predictions, higher levels of fidelity were associated with increased mental health difficulties in several analyses
- Other aspects of implementation (e.g. usual SEL practice at universal and targeted levels, dosage) did not appear to make a difference to mental health outcomes



SDQ total difficulties and PATHS implementation reach

Conclusions

- PATHS improved teacher-rated social-emotional skills for all children
 - PATHS also reduced teacher-rated emotional symptoms and improved child-rated engagement and teacher-rated pro-social behaviour among *at-risk* children
- However, usual practice was more effective in reducing teacher-rated peer problems and improving English scores for all children
 - Usual practice was also more effective in reducing conduct problems among *at-risk* children
- Implementation matters! As expected, there was variability in different aspects of implementation (e.g. quality). This predicted variability in outcomes. Aspects of implementation that were consistently found to predict outcomes included:
 - Usual SEL practice (targeted)
 - Quality
 - Reach
 - Participant responsiveness

Conclusions

- Strengths of the study
 - Large, representative sample
 - Cluster randomised controlled trial design
 - Multiple informants (e.g. child, teacher), multiple outcomes (e.g. social-emotional skills, academic attainment), multiple methods (e.g. survey, observation, standardised test)
 - Training and coaching support to optimise implementation
 - Trial sample balanced on key characteristics
 - No major threats to validity ('John Henry' effect in the usual practice group ruled out)
 - School-level attrition of just 11%
- Limitations of the study
 - Blinding to allocation not possible
 - Only two arms in the trial (PATHS vs usual practice) so non-specific placebo effect cannot be ruled out (although this is very unlikely given the results!)
 - Trade-off between internal and external validity