

Modifying the secondary school environment to reduce bullying and aggression: the INCLUSIVE cluster RCT

Chris Bonell,^{1*} Elizabeth Allen,² Emily Warren,¹
Jennifer McGowan,³ Leonardo Bevilacqua,³
Farah Jamal,^{4†} Zia Sadique,⁵ Rosa Legood,⁵
Meg Wiggins,⁴ Charles Opondo,² Anne Mathiot,³
Joanna Sturgess,² Sara Papparini,¹ Adam Fletcher,⁶
Miranda Perry,⁷ Grace West,³ Tara Tancred,¹
Stephen Scott,⁸ Diana Elbourne,² Deborah Christie,⁹
Lyndal Bond¹⁰ and Russell M Viner³

¹Department of Public Health, Environments and Society, London School of Hygiene & Tropical Medicine, London, UK

²Department of Medical Statistics, London School of Hygiene & Tropical Medicine, London, UK

³Institute of Child Health, University College London Great Ormond Street Institute of Child Health, London, UK

⁴Department of Social Science, University College London Institute of Education, London, UK

⁵Department of Health Services Research and Policy, London School of Hygiene & Tropical Medicine, London, UK

⁶School of Social Sciences, Cardiff University, Cardiff, UK

⁷World Class Schools Quality Mark, St Albans, UK

⁸Institute of Psychiatry, Psychology & Neuroscience, King's College London, London, UK

⁹University College London Hospitals NHS Foundation Trust, London, UK

¹⁰College of Health and Biomedicine, Victoria University, Melbourne, VIC, Australia

*Corresponding author Chris.Bonell@lshtm.ac.uk

†In memoriam

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Scientific summary

The INCLUSIVE cluster RCT

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Scientific summary

Background

Bullying, aggression and violence among children and young people are some of the most consequential public mental health problems. There is clear evidence of a range of physical and mental health harms associated with exposure to bullying and violence, including substance use, poorer long-term mental health, suicide and self-harm, and lower educational attainment. Childhood experiences of bullying and violence influence health and well-being both contemporaneously and well into adult life. Prevention of bullying and violence is, therefore, a major priority for public health and education systems internationally, with schools being a key focus of policy initiatives to improve young people's mental health and well-being.

The INCLUSIVE (initiating change locally in bullying and aggression through the school environment) trial evaluates the Learning Together intervention. In 2014 we developed this intervention based on the three most promising approaches to reduce bullying and other health risks. The first approach is 'whole-school' interventions, which aim to modify overall school policies and systems rather than merely deliver classroom-based lessons addressing bullying or other outcomes. A key element of many of these interventions appears to be increasing student engagement with school as a social determinant of health, particularly for the most socially disadvantaged students, who are at highest risk of poor health and educational outcomes. The second promising approach is restorative practice. This aims to prevent and/or resolve conflicts between students or between staff and students to prevent further harm. It enables victims to communicate the impact of the harm to perpetrators, and for perpetrators to acknowledge and take steps to remedy this, to avoid further harm. The third approach is social and emotional education. Evidence shows that classroom curricula that teaches young people the skills needed to manage emotions and relationships can enhance social relationships, improve mental health and reduce bullying.

Objectives

We hypothesised that in secondary schools randomly allocated to receive Learning Together there would be lower rates of self-reported bullying and perpetration of aggression, and improved student and staff secondary outcomes at follow-up compared with control schools, and that Learning Together would be cost-effective compared with standard school practice. In this paper, we report student health and behaviour outcomes. Data on student educational outcomes and staff outcomes will be published later because routine administrative data will not be available until later in 2019.

Methods

Design and participants

We undertook a two-arm repeat cross-sectional cluster randomised controlled trial of Learning Together with an integral economic and process evaluation in 40 secondary schools in south-east England, with schools as the unit of allocation. Our study population consisted of all students in the school at the end of year 7 (aged 11–12 years) at baseline, and at 24-month (end of year 9; aged 13–14 years) and 36-month (end of year 10; aged 14–15 years) follow-up, as well as school teaching and teaching assistant staff at each time point.

Intervention

School staff were offered training in restorative practices, with participants given written summaries of the material covered in training. Schools were provided with a manual to guide them in convening and running an action group. For the first 2 years of the intervention, schools were provided with an external

facilitator for the action group. Schools were sent a report on student needs, which detailed the findings from a survey of students aged 11–12 years about their attitudes to and experiences of school, and experiences of bullying, aggression and other risk behaviours, at the end of each year (see *Appendix 3*). Schools were provided with written lesson plans and slides to guide the delivery of a classroom-based social and emotional skills curriculum.

Guided by the manual and facilitator, schools instituted action groups comprising staff and students. In the first 2 years of the intervention, these action groups reviewed school rules and policies relating to discipline and behaviour management so that they supported the delivery of restorative practice, and co-ordinated intervention delivery across the school in all 3 years. The facilitator ensured that meetings were scheduled, and attended these to ensure that the meetings were participative and focused on deciding and implementing actions. Action groups reviewed the report of student needs to inform decisions. Schools delivered classroom-based social and emotional skills education in personal, social and health education lessons and/or integrated this into tutor time or various subject lessons (e.g. English) to students in the trial cohort as they moved through years 8–10 (aged 12–15 years). Schools selected modules for each year, such as establishing respectful relationships in the classroom and the wider school, managing emotions, understanding and building trusting relationships, exploring others' needs and avoiding conflict, and maintaining and repairing relationships.

Primary restorative practices delivered in schools in all three years involved staff using restorative language (the respectful use of language to challenge or support behaviour in a manner that preserves or enhances the relationship) and circle time (classes coming together to discuss their feelings and air any problems so that these may be addressed before they escalate), underpinned by supportive schools' rules and policies and the social and emotional skills curriculum. Secondary restorative practices involved some staff implementing restorative conferences (the parties to a conflict being invited to a facilitated face-to-face meeting to discuss the incident and its impact on the victim and for the perpetrator to take responsibility for their actions and avoid further harms).

Schools randomised to the control group continued with their normal practice and received no additional input.

Primary outcomes

The primary outcomes were self-reported experiences of bullying victimisation and perpetration of aggressive behaviour measured at 36 months. Bullying victimisation was assessed with the Gatehouse Bullying Scale. Perpetration of aggressive behaviour was measured using the Edinburgh Study of Youth Transitions and Crime school misbehaviour subscale.

Secondary outcomes

The Gatehouse Bullying Scale and the Edinburgh Study of Youth Transitions and Crime scale were assessed at 24 months as secondary outcomes. The following secondary outcomes were measured at 36 months: quality of life (Paediatric Quality of Life Inventory), well-being (Short Warwick–Edinburgh Mental Well-Being Scale), psychological problems (Strengths and Difficulties Questionnaire), bullying perpetration (Modified Aggression Scale), substance use (smoking, alcohol use and illicit drug use), sexual risk behaviour (age of sexual debut and use of contraception), use of NHS health services and contact with police.

Recruitment

We identified and contacted all potentially eligible schools in Greater London and surrounding counties (Surrey, Kent, Essex, Hertfordshire, Buckinghamshire and Berkshire) between March and June 2014. The 40 participating schools did not differ from the 450 non-recruited schools in school size, population, deprivation, student attainment or value-added education. However, participating schools were more likely to have an Office for Standards in Education, Children's Services and Skills (Ofsted) rating of good or outstanding.

Eligible schools:

- i. Were mainstream secondary schools within the state education system in south-east England.
- ii. Had a most recent school quality rating by Ofsted of 'requires improvement'/'satisfactory', 'good' or 'outstanding'. Schools with an 'inadequate/poor' rating were excluded, as these schools are subject to special measures that were likely to impede Learning Together delivery.

Data collection

Baseline surveys were completed March–July 2014, with 24-month follow-up in April–June 2016 and 36-month follow-up in April–June 2017. Student self-report data were collected using paper questionnaires; students completed these in lesson time in classrooms under exam conditions facilitated by trained researchers with teachers present but unable to read student responses. The field workers assisted students with questions that they did not understand and ensured that students completed as much of the questionnaire as possible. Students with mild learning difficulties or with limited command of written English were supported to complete the questionnaires by field workers.

Process evaluation

In line with Medical Research Council guidance on complex interventions and other frameworks, the process evaluation examined trial context, such as discipline systems, staff training, social and emotional learning curricula and student participation in decision-making, to assess how these differed from what was implemented in the intervention; trial fidelity; awareness (the extent to which students and staff were aware of the intervention); and reception and responsiveness.

Economic evaluation

The economic evaluation used a cost–consequences analysis with all main outcomes and evaluated incremental effects at 24 and 36 months since randomisation. Costs were identified from a public sector perspective, including education, police and NHS resources. The costs of delivering the interventions were collected from the invoices for facilitators and trainers and data from the process evaluation on school staff time requirements. The costs of staff time spent dealing with bullying were collected from the staff survey questionnaire, and the costs of NHS and police resource use data were collected from student survey questionnaire and valued accordingly.

Trial registration and amendments

The trial was prospectively registered as ISRCTN10751359 with the ISRCTN registry on 30 January 2014 and accepted for publication on 30 September 2014. The protocol was amended during the trial to refine the methods used. All amendments were approved by the independent study steering committee and the funder of the trial (National Institute for Health Research). The only change to trial outcomes was the addition of a measure of bullying perpetration (secondary outcome). All refinements were completed before the 36-month surveys were collected and before any trial analyses were conducted.

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Analyses

The primary analysis of outcomes was intention to treat including all randomised schools and participants at each wave. Each measure was analysed using a separate mixed model with the outcomes from each time point treated as a repeated measures outcome. Fixed effects of treatment (Learning Together vs. control), time (baseline, 24 months and 36 months) and the interaction between treatment and time were specified, and the estimated baseline measures were constrained to be identical in the two arms of the trial.

As prespecified in the statistical analysis plan, we carried out analyses adjusted only for baseline measures of the outcomes and the analyses adjusted for baseline measures of outcomes, sex, ethnicity and

socioeconomic status, as well as for the school-level stratifying factors (single-sex vs. mixed-sex school, school-level deprivation, value-added strata), as the primary analysis.

For the co-primary outcomes (Gatehouse Bullying Scale and Edinburgh Study of Youth Transitions and Crime), mixed linear regression models with random effects at the participant and school levels were used to estimate a mean difference in Gatehouse Bullying Scale and Edinburgh Study of Youth Transitions and Crime scores between the two arms of the trial.

Economic analyses

The primary economic evaluation was a cost–consequences analysis. The economic analysis used general linear mixed regression models that allow for clustering of students within schools, and including school as a random effect variable.

Results

A total of 6667 students in the 40 participating schools provided data at baseline, with the participation rate being 93.6% of the students on the school roll (intervention arm, 92.9%; control arm, 94.3%).

Primary outcomes

Overall Gatehouse Bullying Scale bullying scores were lower among intervention than among control schools at 36 months (adjusted mean difference -0.03 , 95% confidence interval -0.06 to 0.00 ; adjusted effect size -0.08). There was no evidence of a difference in Edinburgh Study of Youth Transitions and Crime misbehaviour/delinquency scores (adjusted mean difference -0.13 , 95% confidence interval -0.43 to 0.18 ; adjusted effect size -0.03) between the arms; however, the direction of effect suggests a positive effect of the intervention.

Secondary outcomes

There was no evidence of difference in the Gatehouse Bullying Scale overall score or the Edinburgh Study of Youth Transitions and Crime misbehaviour/delinquency scores at 24 months. At 36 months, students in intervention schools had higher quality of life (Paediatric Quality of Life Inventory adjusted effect 1.44 , 95% confidence interval 0.07 to 2.17 ; adjusted effect size 0.14) and psychological well-being scores (Short Warwick–Edinburgh Mental Well-Being Scale 0.33 , 95% confidence interval 0.00 to 0.66 ; adjusted effect size 0.07) and lower psychological total difficulties (Strengths and Difficulties Questionnaire total score -0.54 , 95% confidence interval -0.83 to -0.25 ; adjusted effect size -0.14) than students in control schools. There was evidence that those in intervention schools also had lower emotional, conduct, hyperactivity and peer problems (Strengths and Difficulties Questionnaire subscales).

Students in intervention schools had lower odds of having ever smoked regularly (odds ratio 0.58 , 95% confidence interval 0.43 to 0.80 ; adjusted risk difference -0.03 , 95% confidence interval -0.05 to -0.01), lower odds of having ever drunk alcohol (odds ratio 0.72 , 95% confidence interval 0.56 to 0.92 ; adjusted risk difference -0.03 , 95% confidence interval -0.06 to -0.01) and lower odds of having ever been offered or tried illicit drugs (odds ratio 0.51 , 95% confidence interval 0.36 to 0.73). Among students in the intervention arm who had ever smoked, there was evidence that the time since the last cigarette was longer than among those in the control arm and, similarly, that, among those who had ever drunk alcohol, there were lower odds of having drunk in the past week (odds ratio 0.67 , 95% confidence interval 0.50 to 0.91), a lower number of times being really drunk (odds ratio 0.57 , 0.33 to 0.98) and lower odds of binge drinking (odds ratio 0.77 , 95% confidence interval 0.59 to 1.00). Similarly, students in intervention schools had lower odds of having ever been in contact with police in the past 12 months than those in control schools (odds ratio 0.74 , 95% confidence interval 0.56 to 0.97 ; adjusted risk difference -0.02 , 95% confidence interval -0.04 to -0.00). We found no evidence of differences in age of sexual debut or use of contraception at first sex, bullying perpetration or use of NHS services.

Exploratory analyses suggest that the intervention may be most effective for students with higher baseline levels of bullying or aggressive behaviours. The intervention also had greater effects for boys in terms of secondary psychological and behavioural outcomes, although not in terms of primary outcomes.

Process evaluation findings

Fidelity was variable, with a reduction in the fidelity of formal intervention activities in year 3. The median fidelity score for years 1–2 (maximum possible score of 8) was 6 (interquartile range 5–7), whereas for year 3 (maximum score of 4) the median was 1 (interquartile range 0–3). In year 3, 15 schools sustained restorative practice. Interviews with action group members and focus groups with staff in case study schools suggested that, in year 3, schools had commonly incorporated what they regarded as the most useful action group functions into mainstream school structures and processes. The fidelity score for year 3 was not associated with either primary outcome. The intervention was delivered more completely when it was led by a member of staff with sufficient authority and support to make decisions and drive delivery. In many, but not all, cases, this was required to be a staff member on the school's senior leadership team.

Slightly over half of staff in intervention schools were aware that the school had been taking steps to reduce bullying and aggression, with this falling slightly between years 2 and 3.

Economic evaluation

The main time components for school staff were attending the training and curriculum delivery. We included staff restorative practice training in intervention costs; however, staff interviews suggested that training was not additional but part of existing training periods, suggesting that our intervention costs may be overestimated. The mean (standard deviation) costs per school of all staff time combined were £232,670 (£113,634) for the intervention arm and £202,405 (£103,090) for the control arm. Costs for health service use and police contacts were similar in both arms. Overall, the intervention increased costs and reduced bullying, leading to incremental costs per Gatehouse Bullying Scale score averted of £2352 at 36 months.

Limitations

The large number of secondary outcomes investigated necessitated multiple statistical testing. The Gatehouse Bullying Scale is a well-established tool to measure the occurrence of bullying victimisation; it aligns with the World Health Organization's definition of bullying but aligns less well with some other definitions, such as that of Olweus, which focuses on repeat victimisation and power imbalances between the perpetrator(s) and the victim. Some aspects of the process evaluation had low response rates.

Conclusions

We present here what is, to our knowledge, the first randomised trial of restorative approaches to reduce bullying and aggression and promote student health in schools, within a multicomponent whole-school intervention engaging students in school decision-making, and providing restorative practice and social and emotional skills education. Learning Together resulted in a very broad range of benefits for behaviour and health outcomes. Learning Together reduced student reports of bullying victimisation compared with schools continuing their standard practice. We did not identify a reduction in student reports of aggression across the whole sample. Additionally, Learning Together appeared to have larger beneficial impacts on a wide range of important secondary outcomes among students, ranging from improved psychological function, well-being and quality of life, to reductions in police contact, smoking, alcohol and drug use. We found intervention effects both in the whole sample and in those with higher levels of bullying or aggression at baseline, implying that the intervention worked to curtail existing bullying and aggression (secondary prevention) as well as prevent new bullying (primary prevention). The intervention may be most effective for students with higher baseline levels of bullying or aggressive behaviours. The intervention also had greater effects for boys in terms of secondary psychological and behavioural outcomes, although not in terms of primary outcomes. The intervention was low cost, falling into the 'very low cost' category for

school interventions according to the Educational Endowment Foundation guidance. The intervention was feasible and acceptable to deliver, with delivery promoted by the involvement of senior staff.

Implications for research and practice

Our study adds to the evidence that whole-school approaches to preventing bullying and aggression and promoting student health are feasible to implement and have positive effects on a range of outcomes in a broad range of high-, middle- and low-income settings. Learning Together offers the potential for broad improvements in behaviour and health in secondary schools and, as the first randomised controlled trial of school-based restorative practice to our knowledge, provides strong support for further development of restorative approaches in secondary schools. The results are important for public health policy, in that a single, very low-cost intervention had an impact on a clustered set of outcomes of public health importance, including bullying, mental health, well-being and quality of life, as well as the use of tobacco, alcohol and drugs.

Trial registration

This trial is registered as ISRCTN10751359.

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