"We were treated like adults"—development of a pre-medicine summer school for 16 year olds from deprived socioeconomic backgrounds: action research study

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“We were treated like adults”—development of a pre-medicine summer school for 16 year olds from deprived socioeconomic backgrounds: action research study

Trisha Greenhalgh, Jill Russell, Lisa Dunkley, Petra Boynton, Frances Lefford, Nikhil Chopra

Abstract

Objective To develop a one week widening access summer school for 16 year old pupils from non-traditional backgrounds who are considering applying to medical school, and to identify its short term impact and key success factors.

Design Action research with partnership schools in deprived inner-city areas in five overlapping phases: schools liaison, recruitment of pupils and assessment of needs, programme design, programme delivery, and evaluation. The design phase incorporated findings from one-to-one interviews with every pupil, and workshops and focus groups for pupils, parents, teachers, medical student assistants, NHS staff, and other stakeholders. An in-depth process evaluation of the summer school was undertaken from the perspective of multiple stakeholders using observation.

Participants 40 pupils aged 16 years from socioeconomically deprived and under-represented ethnic minority groups.

Results The summer school was popular with pupils, parents, teachers, and staff. It substantially raised pupils’ confidence and motivation to apply to medical school. Critical success factors were identified as an atmosphere of “respect”; a focus on hands-on work in small groups; the input of medical students as role models; and vision and leadership from senior staff. A particularly popular and effective aspect of the course was a grand round held on the last day, in which pupils gave group presentations of real cases.

Conclusion An action research format allowed us to draw the different stakeholders into a collaborative endeavour characterised by enthusiasm, interpersonal support, and mutual respect. The input from pupils to the programme design ensured high engagement and low drop-out rates. Hands-on activities in small groups and social drama of preparing and giving a grand round presentation were particularly important.

Introduction

“Widening access” programmes designed to increase applications to medical school from “non-traditional” pupils (that is, those from lower socioeconomic backgrounds, certain ethnic minority groups, and those whose parents did not attend university) have had mixed success. The failure of such pupils to apply to medical school, and to stay the course once accepted, is mainly to do with lack of confidence, lack of support, low motivation, unrealistic images of medicine and medical school, and thinking of themselves as “not a university type.”

We developed a widening access summer school for pupils from under-represented groups to encourage application to medical school and measured its...
Summary of project design and methods

Impact on participants and staff. We also identified aspects of the programme that were critical to its success with a view to replicating these in other settings.

Methods

Study design

The study linked educational development and research by drawing on the principles of action research. This is an emergent approach, in which data are systematically and successively gathered to develop a picture of the problem and inform the next phase of action. The figure and the table summarise the phases of the study.

Phases in action research study with summary data sources and key findings

<table>
<thead>
<tr>
<th>Phase</th>
<th>Goals</th>
<th>Main actions</th>
<th>Data sources</th>
<th>Key findings</th>
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<tr>
<td>Schools liaison (month 1-3)</td>
<td>Identify and build relationships with partnership schools; estimate level of interest; identify challenges</td>
<td>Interviews with teachers, careers officers, and local education authority's widening participation officers</td>
<td>UCL's existing database of local secondary schools in deprived inner city areas (“partnership schools”); field notes from visits to schools; interview notes</td>
<td>Many interested local schools; staff highly motivated but have multiple competing priorities; project aligned well with wider goals for post-16 education locally and nationally</td>
</tr>
<tr>
<td>Recruitment of pupils (month 3-8)</td>
<td>Seek applications; ascertain eligibility; identify pupils' hopes, fears, and expectations about medicine in general and summer school in particular</td>
<td>Work with key contacts in participating schools to identify suitable pupils; confirm “non-traditional” background; interview every pupil individually</td>
<td>Semistructured (qualitative) interviews with 40 of 41 pupils, taped and transcribed; written personal statement from all pupils; demographic data from application form (postcode, whether parents went to university, ethnicity); publicly available database of index of multiple deprivation scores by postcode</td>
<td>33 of 41 pupils lived in the lowest quarter of socioeconomic deprivation; pupils lacked confidence and understated their achievements; surgery, accident and emergency, and high technology specialties predominated in pupils’ perceptions and expectations</td>
</tr>
<tr>
<td>Design (month 7-11)</td>
<td>Plan summer school in liaison with pupils and parents</td>
<td>Develop draft programme; seek input from pupils and parents in refining programme; train staff</td>
<td>Sticky notes and flip chart paper from pupil and parent workshops; feedback from staff and medical student training sessions; risk assessment in liaison with local education authority officers</td>
<td>Hands-on, confidence building activities required small groups and high staff to pupil ratio; watching operations was possible with meticulous planning and prior risk assessment</td>
</tr>
<tr>
<td>Delivery (month 12)</td>
<td>Deliver summer school</td>
<td>Run summer school; capture process data</td>
<td>Ethnographic observation of all sessions by qualitative researchers; documentation of tasks and challenges by all team members</td>
<td>Culture of “respect” in which pupils are expected to work independently and creatively in small groups was a powerful context for learning and personal development</td>
</tr>
<tr>
<td>Evaluation (month 10-16)</td>
<td>Evaluate summer school</td>
<td>Categorize and sort previously collected process data; capture reflections of pupil, parents, and staff after summer school</td>
<td>All above, plus pupil and parent evaluation forms; semistructured survey of teachers and guest tutors; focus groups for staff and medical student assistants</td>
<td>Summer school was seen as a successful educational opportunity by pupils, parents, and staff; its longer term impact has not yet been established</td>
</tr>
</tbody>
</table>

Management and governance

A broad-based steering group was established with representation from funders, participating schools, the local NHS trust, medical students from University College London, and evaluators.

Schools liaison

Using a database of existing “partnership” schools in inner London, we interviewed eight key contacts and discussed the project with six head teachers. Based on these discussions, we set the following eligibility criteria for pupils: attending a participating school; recommended by a teacher, based on assessment of motivation and ability; and parents did not go to university. We also used the index of multiple deprivation score, derived from the project’s home postcode, to prioritise applicants from the most deprived backgrounds (see box A on bmj.com).

Recruitment of pupils and assessment of needs

Of 70 nominated pupils, 41 were offered places and all accepted them, though one withdrew because of illness. Twenty seven of the 29 pupils who we turned down were refused places because both parents had been to university, they had relatively affluent backgrounds, or they lived outside London.

Seventeen (41%) of the 41 accepted pupils were male, 16 were first generation immigrants, and a further 18 were the children of immigrants. The cohort was drawn from 19 different countries of origin and spoke 16 ethnic languages. We interviewed consenting pupils (40 of the 41) with the outline schedule (see box B on bmj.com). Interviews were audiotaped, transcribed, and analysed thematically, as were each pupil’s one page personal statement submitted as part of their application. We presented a summary of findings to the project steering group, our team of medical student assistants at a half day workshop, and pupils and their parents at an evening meeting. Through their feedback, we developed and refined the programme for the summer school. We arrived at the key design points for the summer school through this consultation process (box 1).
Overall, feedback was extremely positive, and pupils thought that all their objectives had been met. The following quote from a pupil is typical:

“It’s a fantastic opportunity and a truly amazing experience that I am grateful to have been a part of as I am now prepared for university and am reassured about going into medicine.”

All but three thought their confidence had increased.

Many guest tutors and medical student assistants commented on pupils’ high level of engagement. Only two of 40 pupils withdrew, and attendance for all sessions was close to 100%. The medical students were impressed by the pupils’ level of maturity and “the extent to which they really wanted to learn.” Guest tutor comments included:

“What surprised me was the extent to which the students were focused on preparing for their grand round tasks. Their motivation was really high with this task—they were working together as teams and really dynamic in their approach. This was very impressive.”

Table A on bmj.com lists the most important things pupils thought they had learnt at the summer school.

The evaluators identified four key critical success factors from the evaluation data:

The fostering of respect—Pupils greatly valued their views being taken seriously and being treated “like responsible adults in a hospital.” A core tutor said, “There was constant reinforcement during the week that we believed in them.”

The input of medical student assistants—Pupils described them as “helpful, motivating, and inspirational.”

The value of working in small groups—described by pupils as “fantastic,” “fun,” “motivating,” “made me want to learn,” “increased my confidence,” as well as many comments that “ours was the best group.”

Box 2: The grand round—building confidence through a complex group task

The grand round was held in a lecture theatre on the final day of the course. Each group of 10 pupils had to describe the history of a real patient and present relevant investigations, treatment plans, and the patient’s progress. To prepare for their presentation, each group of 10 pupils was required to:

- Interview a real patient in-depth about his or her illness and the impact it has had
- Divide up the tasks of finding x ray films, ECG recordings, histology slides, and other relevant materials from different hospital departments
- Collect the empty boxes for the patient’s medication and find out the action and side effects of each drug
- Look up the “evidence base” for the patient’s management with the help of a librarian
- Work together to collate all these into a PowerPoint presentation

Results

Programme design

We addressed non-cognitive objectives (in relation to self esteem, confidence, motivation, peer support, etc) by basing the programme around small groups with medical student assistants present as “buddies.” We asked medical students to nominate suitable guest tutors (kind, supportive, inspirational) from the medical school faculty, each of whom was invited to lead a 90 minute hands-on session, preferably with a real patient. In consultation with guest tutors, we developed objectives and structured lesson plans that reflected key priorities identified in our thematic analysis (for example, watching operations, meeting transplant patients). We undertook a detailed risk assessment, for which a separate report is available.

Programme delivery

After an interactive orientation and objective-setting plenary session, around 90% of the taught programme was delivered in small groups by guest tutors, with medical students acting as mentors, guides, and troubleshooters. We took pupils out of the timetabled activities two at a time to watch an operation. At the end of the day pupils were debriefed in small groups. One specific activity designed to develop peer group bonding and boost confidence was the grand round (box 2).

Evaluation

JR and FL evaluated the summer school from the perspective of pupils, parents, teachers, medical student assistants, patients, and others (full details are available on bmj.com).

Summary

From the outset pupils were primed to assist with the preparation of the grand round, and many prepared material in advance to supply to the pupils when they visited the relevant department. The grand round thus took on the aura of an escalating (and highly competitive) treasure hunt that built up over the week, with each group adding material to its presentation during lunch and tea breaks, and developing creative ideas for outperforming the other groups.
The vision and leadership of senior staff was also important. The medical students supported and enriched the pupils’ learning by developing close and trusting relationships with their groups, helping tutors in teaching sessions, and joining in informal discussions and activities. The type of knowledge imparted by students was sometimes factual (such as explaining what aortic stenosis is), but was more often experiential (such as, “I’ve failed exams but they don’t throw you out”). Furthermore, they personalised advice so as to make it relevant for the individual and context (such as, “I wouldn’t wear that T shirt for Dr X’s session” or “You should put your pharmacy job on your personal statement”).

Through close daily contact with their “buddies,” pupils learnt that medical students are “normal” and, importantly, that “you don’t need to be a super genius or come from a wealthy background to be a doctor.” Perhaps the key dimension of “leadership and vision” as a critical success factor was the energy and commitment with which senior staff visited schools to capture pupils’ and teachers’ priorities and tailored the course accordingly (for example, by building in a strong focus on developing pupils’ confidence). The evaluation identified many suggestions (mostly operational and administrative) for improving the course (see box C on bmj.com).

Discussion

The research and policy literature on widening access emphasises the high academic potential of many non-traditional pupils, their low application rates to university, and high drop-out rates. It suggests a large untapped reservoir of non-traditional pupils who have much to offer but whose commitment is fragile and who require enrichment and support to make it to, and through, university.

Bruner (among others) has criticised the literature on educational attainment in underprivileged children for conceptualising the problem as a “deficit” in the child that must be made good. Writing mainly about US enrichment programmes for the under 5s, he argues that it is the environment that we should think of as requiring enrichment, not the learner. Our experience with these pupils, who engaged enthusiastically with the design of the summer school and seized the opportunities they had helped create, strongly supports this conceptual model.

Bloom proposed that educational experiences have three dimensions: cognitive (imparting knowledge), psychomotor (acquiring skills), and affective (changing attitudes and motivation). The literature on group work in educational settings suggests that the small group format is not especially effective in achieving cognitive objectives but is highly effective in developing complex skills and in changing the attitudes and perspectives that underpin learning and make it meaningful. The mechanisms for this may include

"Widening access" initiatives to increase application and subsequent retention in such groups have had mixed success

What this study adds

Action research can be used to engage schools and pupils in the design and delivery of a summer school

Hands-on activities in small groups and a “grand round” in which all pupils participate are effective learning methods

Close contact with medical student “buddies” can boost confidence and motivation

- Social modelling (observing peers behaving in a certain way or expressing particular views)—for example, learning elementary “bedside manners”
- Vicarious experience (being inspired to action or put off) by what happened to someone else)—for example, watching someone struggle with questions in a mock interview
- Development of social capital (such as friends, contacts, and local knowledge)
- Collective sense making (in which the group questions, negotiates, and reframes the meaning of information until it is expressed in a way that is acceptable, meaningful, and sensible)
- Transmission and personalisation of “tacit” knowledge (that is, practical know how that is difficult to articulate formally and that you don’t often find in books)
- Reframing of identity (for example, from “someone who isn’t a university type” to “someone who is”)
- Social drama (the group members being caught up in a real unfolding story)—for example, in the grand round task.

We found no evidence in these pupils of anti-academic values or attempts to subvert the educational aims of the summer school. In our own previous research, both these themes had been prominent in white and African-Caribbean boys volunteering for pre-medicine activities. Other researchers have described anti-academic values and subversive behaviour in boys of both white and mixed ethnicity in the UK and in (mostly white) girls in the US. We believe that inviting teachers personally to nominate individual pupils for a limited number of places served to filter out disaffected and half hearted pupils. This probably means that despite our best efforts, we have still failed to access a cohort of able pupils who have been “turned off” academic career options before the age of 16. Further research with younger age groups is needed to explore this hypothesis.

In conclusion, we have shown that it is feasible to work in partnership with aspiring applicants to medical school from socioeconomically deprived backgrounds.
backgrounds and with no family tradition of higher education to design and deliver a successful short term educational opportunity. We have identified what we consider are the critical success factors of such a programme and predict that, if these can be replicated, the summer school should be broadly transferable to other settings. But we have not yet shown a long term impact of this initiative on pupils’ identity, confidence, motivation, or action. We are continuing to follow these pupils as they enter the sixth form and begin to construct their applications to medical school, and we hope to publish data at a later stage on their success rates and subsequent progress.

We congratulate the pupils who participated in the Dick Whittington project for their enthusiasm and hard work. We thank all participating schools for their engagement and collaboration and Mohammed Lasi for help with interviews. The summer school could not have been possible without the positive support and cooperation of the management and staff of the Whittington Hospital Trust and especially the many clinicians who served as guest tutors. We are extremely grateful to our three sponsors who provided funding and active input to the project steering group.

Contributors: See bmj.com.

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A memorable patient

A memorable patient

Last year I was involved in the care of a young woman who had had Hodgkin’s disease diagnosed some 18 months previously. Initial chemotherapy was complicated by her severe learning disability—she lacked insight into her illness and capacity to consent to treatment. We managed to work our way round all the problems, and she sailed through six months of investigations and treatment, always leaving the unit with a smile and a chuckle.

Everyone was upset when she relapsed and required further treatment. Her venous access had deteriorated so infusional chemotherapy had to be given through a Hickman line. On her first return visit to the unit all went well until it was time to leave. She steadfastly refused to move from her chair and was visibly distressed. The nurses and carers tried to tempt her with offers of food, fruit juice, and a sleep when she got home, but to no avail. She became more upset and at one point jumped up and started raking about in the dressing pack that had been used to clean her line. We wondered whether she had lost something and helped her to unpack her rucksack to check that all was accounted for. Nothing was missing.

As a last resort, we tried to think of what might have been different between her previous experiences at the chemotherapy suite and those on that day. One nurse who had cared for her previously remembered the special ceremony that always surrounded applying a dressing pack that had been used to clean her line. Our patient seemed delighted, leapt up, put on her dressing pack and then applied it next to the line with much aplomb. Our patient seemed delighted, leapt up, put on her rucksack, smiled at everyone, and left for home. This encounter reminded me of the difficulties that one may experience when the usual channels of communication are lacking and that patients often have fixed expectations of a consultation. Deviations from the usual ritual of events can be unsettling and frankly unacceptable to some. I will always try to keep this in mind in the future.

Sarah H Oram

specialist registrar in haematology

University College Hospital, London (helenoram@doctors.net.uk)

The patient’s father and advocate were pleased to hear that caring for this woman had made the doctors and nurses looking after her reflect on important themes and felt that it was a shame that more doctors could not share our experience. We sought their opinion about the article before submission as we did not wish to cause offence inadvertently. Her advocate, social worker, and carers all supported her father’s consent to publication.

We welcome articles up to 600 words on topics such as A memorable patient, A paper that changed my practice, My most unfortunate mistake, or any other piece conveying instruction, pathos, or humour. Please submit the article on http://submit.bmj.com Permission is needed from the patient or a relative if an identifiable patient is referred to.