“Pre-schoolers in the Playground” – a pilot cluster RCT of a physical activity intervention for children aged 18 months – 4 years old.

Sally Barber
Presentation overview

- Evidence-base
- The PiP intervention
- Trial aims & objectives
- Results (recruitment, feasibility, acceptability)
- Conclusions & further work
Evidence-base

Intervention aim:

To increase physical activity levels for pre-school children and reduce health inequalities

Theory: SCT
Outdoor setting
Chief Medical Officer Guidance
Parent involved
Targeted
Target group engaged in developing
Upstream/downstream
### Setting
- Primary school playgrounds

### Delivery
- Parental involvement workers
- Early years workers

### Training
- 2 hour face-to-face
- Manual
- Telephone support

### Structure
- Initiation phase (10 weeks)
- Maintenance phase (20 weeks)

### Content
- Structured & unstructured play
- Information to parents
- Take home play equipment
Aims and Objectives

• Assess feasibility of a full scale trial of the PiP intervention

  **Success = 25% school recruitment rate, 15 children per school, 70% retention to trial @ 10 weeks**

• Recruitment & follow-up

• Acceptability and feasibility of trial, outcome measures & intervention

• Fidelity of implementation & delivery

• Effect sizes and sample size calculation

• Cost effectiveness

• *Ethnic comparisons*
Consented: 10 schools (37%)  
164 children (48%)  
Accelerometer, anthro, parent and child  
HRQoL

PiP  
schools = 5  
children = 83  
average cluster = 16.6

10 weeks  
Completed = 82%  
Withdraw = 2.5%  
Lost to follow-up = 15.5%

52 weeks  
Completed = 81%  
Withdraw = 2.5%  
Lost to follow-up = 16.5%

control  
schools = 5  
children = 81  
average cluster = 16.2

10 weeks  
Completed = 82%  
Withdraw = 9%  
Lost to follow-up = 9%

52 weeks  
Completed = 83%  
Withdraw = 9%  
Lost to follow-up = 8%

Qualitative interviews  
14 parents, 6 Facilitators, 2 Head teachers
Motives for participation

* School familiarity
* Child will benefit, help child to be more active
* New way to engage with hard to reach families
* Parent & child meaningful activity, improved language and learning
Benefits for children, parents & schools

“He shares a lot now…He’s made more friends I guess that’s the best thing.”
[Mother]

they (parents) were active with children, and they were doing, you know, you know, things that they would never have done, ideas for sort of ball games and play activities and just other people are modelling good language... certainly the, the parents are coming to us, you know, they, they’ve been more involved with their children’s learning this year. [Head teacher]

The project made the Nursery staff more aware of the work that needs to be done with parents playing outside. Parents do not seem to realise the importance of play. Nursery will be looking into encourage parents to play next year [Head teacher]
## Attendance to PiP Initiation

<table>
<thead>
<tr>
<th>Season and school ethnicity</th>
<th>White</th>
<th>South Asian</th>
<th>South Asian</th>
<th>South Asian</th>
<th>White</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children, n</td>
<td>13</td>
<td>16</td>
<td>15</td>
<td>21</td>
<td>18</td>
<td>83</td>
</tr>
<tr>
<td>Attended any session, %</td>
<td>45.2</td>
<td>62.5</td>
<td>40.0</td>
<td>81</td>
<td>83.3</td>
<td>65.1</td>
</tr>
<tr>
<td>Sessions attended Mean (SD)</td>
<td>1.8 (1.0)</td>
<td>2.3 (1.4)</td>
<td>10.7 (10.6)</td>
<td>13.6 (9.8)</td>
<td>10.8 (10.7)</td>
<td>9.1 (9.6)</td>
</tr>
</tbody>
</table>

### Reasons for not attending:
- Weather & season
- Competing priorities
- Family & child sickness
- Session timings
- Facilitator unfamiliar
## Attendance to PiP Maintenance

<table>
<thead>
<tr>
<th>Maintenance</th>
<th>White</th>
<th>South Asian</th>
<th>South Asian</th>
<th>South Asian</th>
<th>White</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children, n</td>
<td>13</td>
<td>16</td>
<td>15</td>
<td>21</td>
<td>18</td>
<td>83</td>
</tr>
<tr>
<td>Attended any session, %</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>28.6</td>
<td>22.2</td>
<td>15.7</td>
</tr>
<tr>
<td>Sessions attended</td>
<td>0.0</td>
<td>0.0</td>
<td>8.3</td>
<td>5.0</td>
<td>3.0</td>
<td>5.2</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>(0.0)</td>
<td>(0.0)</td>
<td>(1.2)</td>
<td>(3.7)</td>
<td>(2.3)</td>
<td>(3.4)</td>
</tr>
</tbody>
</table>

**Reasons for not attending:**

- Changes in family routines & circumstances
- Poor weather
- Lack of visibility (no facilitator)
- School building
- Intervention too long
Feasibility of accelerometers

Valid wear-time = 6 hours on 3 days

<table>
<thead>
<tr>
<th>Group variable</th>
<th>Baseline</th>
<th>10 weeks</th>
<th>52 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, n (%)</td>
<td>113 (68.9)</td>
<td>87 (53.0)</td>
<td>87 (53.0)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>22 (36.7)</td>
<td>28 (46.7)</td>
<td>28 (46.7)</td>
</tr>
<tr>
<td>South Asian</td>
<td>44 (47.3)</td>
<td>55 (59.1)</td>
<td>56 (60.2)</td>
</tr>
</tbody>
</table>

39% provided accelerometer data that met the wear time criteria at both baseline and 52 weeks

“She loves it, she loves wearing belt. I think it makes her think she’s important” [Parent]
Conclusion

Criteria for success

- 25% school recruitment rate ✓ 37%
- 15 children per school ✓ mean 16.4
- 70% retention to trial @ 10 weeks ✓ 82%

Full trial feasible with modifications

* Summer-term only intervention
* Increase familiarity of Facilitator to families
* Train Nursery staff to administer & check accelerometers each day
* Daily text/call reminder
* Desirable incentive for child
* Check wear-time at collection, leave for longer if necessary
* Check for malfunctions
Further work: Tailoring interventions

- Poor South Asian families were more willing to engage in both the PiP trial and the intervention compared to poor White families – why?
  - better social networks?
  - more involved in the community?
  - less isolated?
  - familiar with group activities?
  - Less fearful of services?

- Is this the same for other community level, group-based interventions?
Acknowledgements

Prof. John Wright
Shaheen Akhtar
Daniel Bingham
& the BiB community team

Dr. Cath Jackson
Hannah Ainsworth
Gerry Richardson
Dr. Catherine Hewitt
Prof. Kate Pickett

Ash Routen
Claire O’Malley
Dr. Helen Moore
Prof. Carolyn Summerbell

The Bradford schools & families taking part

Funded by an NIHR Public Health Research Grant (reference: 11/3001/16)
UK Congress on Obesity 2014

University of Birmingham, Edgbaston Campus
Tuesday 16th September and Wednesday 17th September 2014