Birmingham, West Midlands Young Persons' Physical Activity Pathway Pilot

Evaluation Report

University of Gloucestershire

August 2011

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Acknowledgements

We are extremely grateful to the Steering Group members who worked with the evaluation team to develop an evaluation approach, the design and methods that facilitated the evaluation of the successful pilot of the Young Persons' Physical Activity Pathway (YPPAP). We would also like to acknowledge the funding for the pilot, received from the Department of Health, and managed through the PAN-WM (Physical Activity Network – West Midlands).

The professionalism and positive approach by those involved contributed greatly to the success of the pilot. Implementing pathways such as this is always challenging, yet it is clear that the intervention staff embraced it within a spirit of collaboration. This helped to address challenges, minimise disruption and aid collective learning. We are particularly grateful for the support and commitment shown by the project manager, Thalat Mahmood (TM) of Calthorpe School Sport Partnership (SSP), in maintaining the momentum of the pathway and in helping to avoid, and resolve, problems along the way.

Without the support of the schools involved, the piloting of the pathway would not have been possible. We are extremely grateful to all staff and schools from the Calthorpe School Sport Partnership (SSP) for their contribution and support, particularly in helping to coordinate the pathway and facilitating data collection.

We would especially like to thank Mark Roscoe, Commissioning and Development Manager for his knowledge and insight which helped to make the implementation of the pathway possible. As evaluators, we recognise the importance of working closely with commissioners and practitioners to ensure that research is as insightful as possible. We feel that this report demonstrates good practice for similar evaluations in the future and are grateful to the Heart of Birmingham Teaching Primary Care Trust and the members of the Steering Group.

To reference this report, please use the following citation:

Baker, C., Crone, D., Gidlow, C. & James, D.V.B. (2011). *Birmingham, West Midlands' Young Persons' Physical Activity Pathway: Evaluation Report*. University of Gloucestershire, U.K.

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Executive summary

The Birmingham, West Midlands' Young Persons' Physical Activity Pathway (YPPAP) is a pilot six week behavioural intervention (a physical activity pathway) aimed at increasing physical activity levels in school-aged children in school years 6 and 7 (ages 10-12 yrs). It builds on the experiences of the South Staffordshire (SS) Physical Activity Care Pathway (PACP), but was developed specifically to focus on school-age young people in an urban city setting.

For the purposes of the evaluation a mixed-methods approach including a quantitative and qualitative component was employed. Data analysis revealed that of the 239 eligible participants, 99 entered the pathway (31.2%). Ninety-three participants set physical goals at baseline and 3 were lost to follow up representing a pathway completion rate of 97% (n = 90). Overall, the results indicated that the increase in 'spare time' physical activity was statistically significant ($t_{(95)}$=-2.88, p=.005), but the differences were not significant for overall physical activity ($t_{(95)}$=-.096, p=.924), or mean frequency of physical activity ($t_{(95)}$=-.414, p=.680). Analysis also revealed that the correlation between change in physical activity between baseline and follow up and the number of goals set by participants was not significant (r = 0.08, p =.436). Qualitative findings revealed that participants perceived that the pathway had helped to educate them about the relationship between physical activity and health and had provided a means of engaging with physical activity in a way that was fun and non-threatening. Delivery costs were also calculated taking into account management and delivery costs, including resources, training and support, the total cost per child of delivering the intervention was £143.

The high completion rate might point to the utility of using school settings for physical activity interventions. Problematically, the limited sample size prevented the meaningful investigation of any relationship between the physical activity options chosen by young participants and outcomes in terms of potential increases in levels of physical activity. Similarly, it was not possible to fully investigate the potential effects of gender, class, ethnicity, disability status on adherence to the pathway or physical activity behaviour. More usefully, data analysis revealed that the pathway attracted a range of participants which demonstrated potential for securing the interest and motivation of participants. This finding underpins the importance of understanding the number, variety and availability of local physical activity opportunities and delivering the intervention in a way that is engaging and supportive.

1. Introduction and context

The Birmingham, West Midlands' Young Persons' Physical Activity Pathway (YPPAP) pilot was a six week behavioural intervention (a physical activity pathway) aimed at increasing physical activity levels in school-aged children in years 6 and 7 (10-12 yrs). The pilot was developed following the completion of the evaluation of the South Staffordshire (SS) Physical Activity Care Pathway (PACP). This pathway used Health Trainers (trained Lifestyle Advisers) to deliver an adult physical activity intervention in rural areas and those less urban than the present pilot. The focus on school age young people in an urban city setting clearly provides a very different context for the YPPAP in comparison with the SS PACP. Thus, the YPPAP is being evaluated in practice under particular 'conditions' that, to date, have not been the basis for a physical activity pathway.

Physical activity promotion has become a pervasive feature of UK health policy and is recommended as a principal means of securing the healthy growth and development of children (NICE, 2009). Physical activity[1] provides a fundamental means of improving physical and mental health status (World Health Organisation, 2006) and plays a significant role in reducing risk factors for chronic diseases such as high blood pressure, overweight and obesity and high levels of low density lipoproteins (World Health Organisation, 2007). Current guidelines recommend that all children and young people should engage in moderate to vigorous intensity physical activity for at least 60 minutes and up to several hours every day (Department of Health, 2011). Despite these benefits, physical inactivity continues to present a major public health challenge in the developed world with considerable economic ramifications (Department of Health, 2004). Problematically, evidence suggests that the increase in overweight and obesity in the UK shows little sign of abating with obesity levels set to rise so that, by 2025, approximately 14% of all young people (<20 years old) will be classified as obese (The Information Centre for Health and Social Care, 2009). As such, addressing concerns over increasing rates of obesity remains a central Government concern (HM Government, 2011).

In a systematic review of interventions to increase physical activity, NICE declared that brief interventions in primary care were an effective and cost effective means of increasing physical

[1] Physical activity is any voluntary bodily movement or action that results in energy expenditure (Caspersen *et al*., 1985). Evidence shows that regular leisure-time physical activity for example, walking (Wannamathee and Shaper, 2001) is associated with reduced mortality even after genetic and other factors are accounted for (Hardman and Stensel, 2003; Kujala *et al*., 1998; Lee and Skerrett, 2001).

activity in the general population (NICE, 2006). Three additional approaches covered in the review included exercise referral schemes, pedometers and community based exercise programmes for walking and cycling. Consistent with this evidence, the 'Let's Get Moving' PACP (Department of Health, 2009) supports behaviour change (physical activity in this context) by drawing on brief interventions, goal setting, written resources and follow-up support.

Research from outside the UK investigating the feasibility of running interventions in school settings as a means of increasing physical activity levels report mixed findings. Using elementary schools as a setting, Naylor et al. (2008) found that providing schools with the necessary training and resources to increase children's physical activity increased the average number of steps taken by boys over a 16 month period. Whilst no overall effect was found for girls, this finding lends support to Rhodes et al. (2006) who suggest that childhood may be a critical stage for the development of physical activity behaviour and that normative and control-based interventions may be required to maximise uptake. As such, the importance of the support of parents, siblings, friends and schools on physical activity behaviour is recognised (Hohepa *et al*., 2007; Welk *et al*., 2003), but it is also important that interventions are tailored so that they reflect the settings in which they take place. For example, Joens-Matre et al. (2008) found that providing physical activity opportunities during children's lunchtime might be an effective way of increasing physical activity levels of urban children, whilst scheduled after-school activities may be more important for children in rural areas. This underpins the importance of developing 'culturally sensitive' health promotion initiatives that build individual and organisational capacity to affect change in behaviour and the environment in which it takes place (Butterfoss and Kegler, 2002).

The promotion of physical activity has been politically pertinent since estimations and predictions regarding the impact of rising levels of obesity could have on our society. These concerns, and those regarding health inequalities, have been identified in numerous health policy documents complemented by recommendations and plans for action to address and combat these. For example, most recent policy publications highlighting these concerns included the Marmot Review, 2010; the health white paper 'Healthy Lives, Healthy People' (Department of Health, 2010) and more specifically for physical activity, the 'Be Active, Be Healthy' physical activity plan (Department of Health, 2009). Therefore the development of this PACP for young people, designed and implemented in Birmingham, is therefore a contemporary intervention that supports these calls and recommendations for prevention programmes in public health. It complements the Change4Life

campaigns, the National Child Measurement Programme and other targeted interventions to address health inequalities, rising levels of obesity and general healthy living of young people.

The evaluation team were commissioned to assist with the design, implementation and evaluation of the YPPAP within the Calthorpe School Sports Partnership (SSP). A key part of the evaluation team's remit was to work with the various stakeholders to ensure that the design, methods and tools for evaluation were understood and that every effort was made to collect data of the highest quality. This, in turn, should ensure that evidence informs the delivery of future young persons' physical activity programmes in Birmingham, the West Midlands area and beyond. Since the evaluation was initiated, the Physical Activity Network West Midlands (PAN-WM) has been suspended. The Network is an independent region-wide network that supports those working to increase physical activity levels in the population of the West Midlands. Whilst this did not impact the YPPAP pilot *per se*, it is recognised that this does have potential implications for the dissemination of the evaluation findings. In spite of these challenges, the YPPAP pilot and its evaluation provide an example of good practice whereby practitioners and evaluators worked together to create an integrated approach to a Physical Activity Care Pathway focusing on children.

2. Evaluation aims and objectives

The evaluation team, in collaboration with the Calthorpe School Sports Partnership (SSP) based in Highgate, Birmingham, was commissioned by the Department of Health to undertake an evaluation of the pathway in schools within the SSP. From the outset, the over-arching aims of the evaluation were to:

1) evaluate the effectiveness of the pathway in terms of levels of engagement and increases in physical activity (PA) through implementing a data collection system to assess a young person's progress through the pathway. This included an investigation of participant levels of engagement (i.e., attendance at screening, commencing intervention, level of completion) and changes in PA levels in relation to demographic data (i.e., gender, age, socioeconomic status, etc) and PA choice.

2) investigate the attitudes, opinions and experiences of the young people involved in the project (i.e. those following the pathway) with respect to the feasibility of using the school setting for increasing physical activity through such a pathway.

These over-arching aims translated into the following deliverables for the evaluation team:

D1. Investigate the feasibility, implementation and overall effectiveness of the pathway in changing physical activity levels in participants.

D2. Establish the flexibility of different modes of activity in the delivery element of the PACP and provide recommendations regarding the feasibility of different delivery mechanisms.

D3. Investigate the effectiveness of the pathway in moving individuals through the screening, intervention, delivery and completion elements of the pathway and the role that health trainers play. This includes looking at 'drop-out' from the pathway and either tracking activity levels or stages of behaviour change across the pathway.

D4. Quantify the cost per young participant of implementing the pathway.

D5. Produce a final report detailing the evaluation findings and a practical framework for future commissioning approaches.

A number of research questions corresponding to each deliverable were established. These were:

1. Are schools a feasible setting for such a physical activity care pathway? (including opportunities and barriers) (D1).
2. What evidence is there for physical activity behaviour change in young participants during the course of the pilot? Is the pathway effective at creating behaviour change in the short term? (D1)
3. Which physical activity services appear most popular at the service delivery stage and what are the implications of this for practice? (D2).
4. What can we learn by comparing the activity options chosen by young participants and outcomes regarding increases in levels of physical activity? (D2).
5. How does participation and adherence to physical activity and the care pathway vary with gender, class, ethnicity and disability status? (D3).
6. How much does the pathway cost to implement (in terms of money, people, time, etc) (D4).

3. Evaluation design and methods

The evaluation study design involved a mixed-methods approach, including the evaluation of process and outcomes (including costs), through quantitative and qualitative research techniques.

Ethics approval and data protection

Given the setting and target population for the pilot, the evaluation team were particularly aware of ethics considerations. Considerable time and effort was spent ensuring that the evaluation satisfied the University of Gloucestershire Ethics Committee. Ethical approval was granted by the University of Gloucestershire Ethics Committee in November 2010. Data protection was assured through the use of anonymised participant data, with electronic records held on password protected University computers and raw data stored in locked filing cabinets within a secure office.

Participant selection, recruitment and informed consent

The aim was to recruit 250 children who completed the pathway for the evaluation. This proposed sample size was estimated to meet the needs of the quantitative aspect and provides an adequate sample for the qualitative component. In consultation with the Steering Group, schools were identified and invited to take part, after which a single class in each was purposively sampled. The purpose and nature of the pathway was then explained and letters of consent were issued to the children and their parents. Those who returned the individual and parental consent were included in the pathway. For the qualitative element, group interviews were undertaken with a subsample of young participants who had completed the pathway. Selection depended on availability and was completed on the advice of the project manager (TM).

Research methods

To address Aim 1, a prospective longitudinal follow-up design was employed, where quantitative data were collected from young people at: i) baseline (i.e., the point of introduction to the pathway); ii) during the intervention (i.e., during transition through the pathway); iii) when choosing PA; iv) pre and post intervention PA level; v) at 3 months follow-up. Individual participants were assigned a unique identifier which allowed them to be tracked throughout the pathway. Data were pooled to explore differences in progression and to compare participant characteristics including socio-

demographic data (e.g., age, gender, ethnicity, disability status, post code), and programme characteristics (e.g. PA choice, venue, goal setting).

In consultation with the Steering Group a data collection protocol was developed to record participant data and track their progress through the pathway. The protocol was developed using the Physical Activity Questionnaire for Older Children (PAQ-C). The PAQ-C is a self-administered, 7-day recall questionnaire that measures general moderate to vigorous physical activity levels during the school year for school-aged children aged approximately 8 to 14 years old (Kowalski *et al*., 2004). The utility of the PAQ-C is that it measures general physical activity levels in comparison to the precise intensity, frequency and duration of young people's activities, which is harder to measure, especially with self-report (Kowalski *et al*., 2004). Participant booklets were prepared using the protocol (see Appendix A). To ensure that the participants' progress and data were recorded accurately, each participant was given a separate booklet that included all data highlighted in Table 1.

Table 1: Data collected from participants

* *Data collected by project manager*	* *Pre Intervention data collected by interviewer at BI*	* *Post intervention data collected by interviewer (6 week follow-up)*
▪ Number of schools invited ▪ Number of schools agreed to be involved ▪ Number of parent letters/consent sent and retuned ▪ Number of letters of consent to children/no returned ▪ Number of BI appointments attended	▪ Physical activity (PA) level measurement (PAQ-C 7 day recall for children 8-14 years). ▪ Attended BI (yes or no) ▪ Demographic data Gender, Postcode Ethnicity Age Disability status Height (cm) and weight (kg) ▪ Set PA goal/s (yes or no) ▪ PA goal characteristics: ▪ Independent or organised activity ▪ Team-based or individual sports ▪ With other or on own ▪ In school or outside school	▪ PA level measurement ▪ Attended 6 week follow-up (yes or no) ▪ Height (cm) and weight (kg) ▪ Achieved PA goal Y/N/Partial ▪ PA goal achieved: ▪ Independent or organised activity ▪ Team-based or individual sports ▪ With other or on own ▪ In school or outside school ▪ Attitudes to achievement/involvement ▪ How they feel having been involved in project? ▪ Changes in other lifestyle behaviours such as diet, mode of transport to/from school, etc.

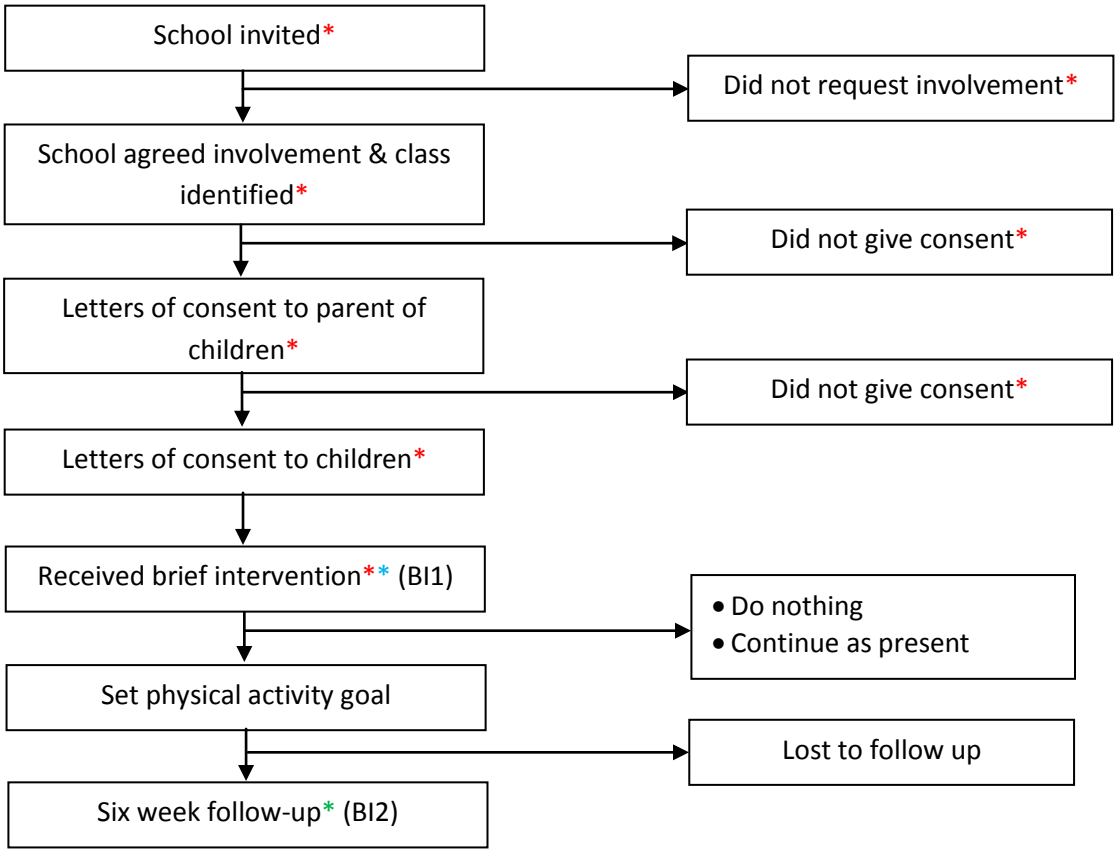
Note: see Figure 1 for associated data collection points signified by asterisks.

Data were stored securely by the project staff responsible for the behavioural interviews at each respective school. The unique identifier ensured that the identity of participants was known only by

the staff in the participating schools and was not passed on to the evaluation team or other third parties.

Figure 1 illustrates the key stages of the pathway. In consultation with the Steering Group, two principal data collection points were established at pre-intervention (BI1) and post-intervention (BI2), with additional data collection concerning the schools and participant demographics (see Table 1). Open questions concerning young participants' perceptions of the pathway and physical activity were included in the booklets to add a qualitative dimension. Consistent with guidance in the PAQ-C[2], it was explained to the young participants entering the pathway that the questions in the booklet were not part of a test and that it was designed to understand the actual activities that they had undertaken in the seven days prior to the behavioural interview.

Figure 1: Schematic illustrating key components of the pathway



[2] Available at: http://toolkit.s24.net/documents/en/PAQ/PAQ_manual.pdf

To address Aim 2, data were collected via two group interviews (one year 6 group, *n* = 13, and one year 7, *n* = 11) to investigate the attitudes, opinions and experiences of the young people who had engaged in and completed the pathway. The group interviews allowed the evaluation team to explore the following themes:

- Participants' experiences of the pathway
- Motivations for sustaining physical activity
- Exposure to new physical activity types
- Advantages/positive aspects of taking part
- Disadvantages/less positive aspects of taking part
- Perceptions of physical activity and health
- Future physical-activity-related goals

Each group was purposively sampled from two schools. The group interviews were undertaken using a semi-structured interview guide and recorded on a digital voice recorder. To comply with data protection requirements the recordings were transcribed verbatim and transferred to a password protected computer of the researcher undertaking the interview. The original sound file was deleted from the recorder and the subsequent transcripts (Word file) were stored on University-based password protected computers (in the locked office of Dr Colin Baker).

4. Data analysis methods and procedures

Quantitative data analysis

Upon completion of the pathway, the Project Manager (TM) collected all participant booklets from the intervention staff. A member of the evaluation team then collected these in person. All data in the booklets was then collated, cleaned and labelled using Excel before being imported into SPSS v.16 for analysis. Key stages of analysis included descriptive analysis to categorise the data for subsequent comparative analysis. The PAQ-C was referred to in order to calculate participants' pre (BI1) and post intervention (BI2) physical activity scores as follows:

- Item 1 (Spare time activity).
  The mean of all activities ("no" activity being a 1, "7 times or more" being a 5) was taken to form a composite score for each participant.

- Items 2 to 8 (PE, break time, lunch, right after school, evening, weekends, and 'describes you best').
  Reported values on each of the questions (1 being the lowest activity response and 5 being highest) were recorded against each participant.

- Item 9 (level of physical activity during last week: 1 being a "none", 5 being a "very often").
  The mean of all days of the week was taken to form a composite score.

- Item 10 (sick or prevented from doing physical activity).
  This is used to identify students who had unusual activity during the previous week, but was not used as part of the summary activity score.

- Calculate the final PAQ-C activity summary score.
  Once the values (1-5) for each of the 9 items (items 1 to 9) were obtained the mean of all 9 items was calculated. This represented the final PAQ-C activity summary score. A score of 1 indicated low physical activity, whereas a score of 5 indicated high physical activity. This provided the primary physical activity outcome used in analysis.

Participants height and weight were recorded, which allowed them to be classified by weight to allow exploration of potential factors that explained participation through the pathway. Weight classifications were established using the UK 1990 BMI growth reference charts.[3] Although there is no universally agreed BMI-based classification system for children, this tool gives age and gender-specific information. In addition, participant home postcodes were used to derive the relative level of deprivation based on the Index of Multiple Deprivation (IMD) (Communities and Local Government, 2007). Working at Lower Super Output Areas (LSOAs), the IMD Index establishes the relative level of deprivation experienced in an area across seven principal domains including:

- Income Deprivation
- Employment Deprivation
- Health Deprivation and Disability
- Education, Skills and Training
- Barriers to Housing and Services
- Crime
- Living Environment

Qualitative data analysis

Interviews were transcribed verbatim and transcripts were downloaded into the qualitative software package NVivo 8 (QSR International Pty Ltd, 1999-2008) which was used to store and manage the data in preparation for analysis. The qualitative data analysis approach employed was inductive content analysis (Bawden and Maynard, 2001). In keeping with this approach, data were initially coded into broad themes. This was followed by the systematic process of re-viewing these broad themes, looking for connections between themes and their relevance to the research aims and objectives. Memos were attributed to each text unit specifically to indicate the meaning and researcher's understanding of each unit and to allow for more stringent theme development and advanced analysis of participants' perceptions. In the latter stages theme creation was achieved by reviewing the content and name of each theme and identifying subtle nuances and associations between themes.

This approach allowed the nominated researcher to unpack key themes within the data and explore them within the context in which participation took place. Although the sample is not purported to

[3] Available at: http://www.fph.org.uk/uploads/HealthyWeight_SectE_Toolkit04.pdf

be representative, and individual responses are but one aspect of a range of evidence, these provided a rich contextual understanding of the factors experienced by young people. Consistent with the evaluation brief, findings were synthesised where appropriate with the qualitative data recorded by the intervention staff in order to provider a richer set of findings.

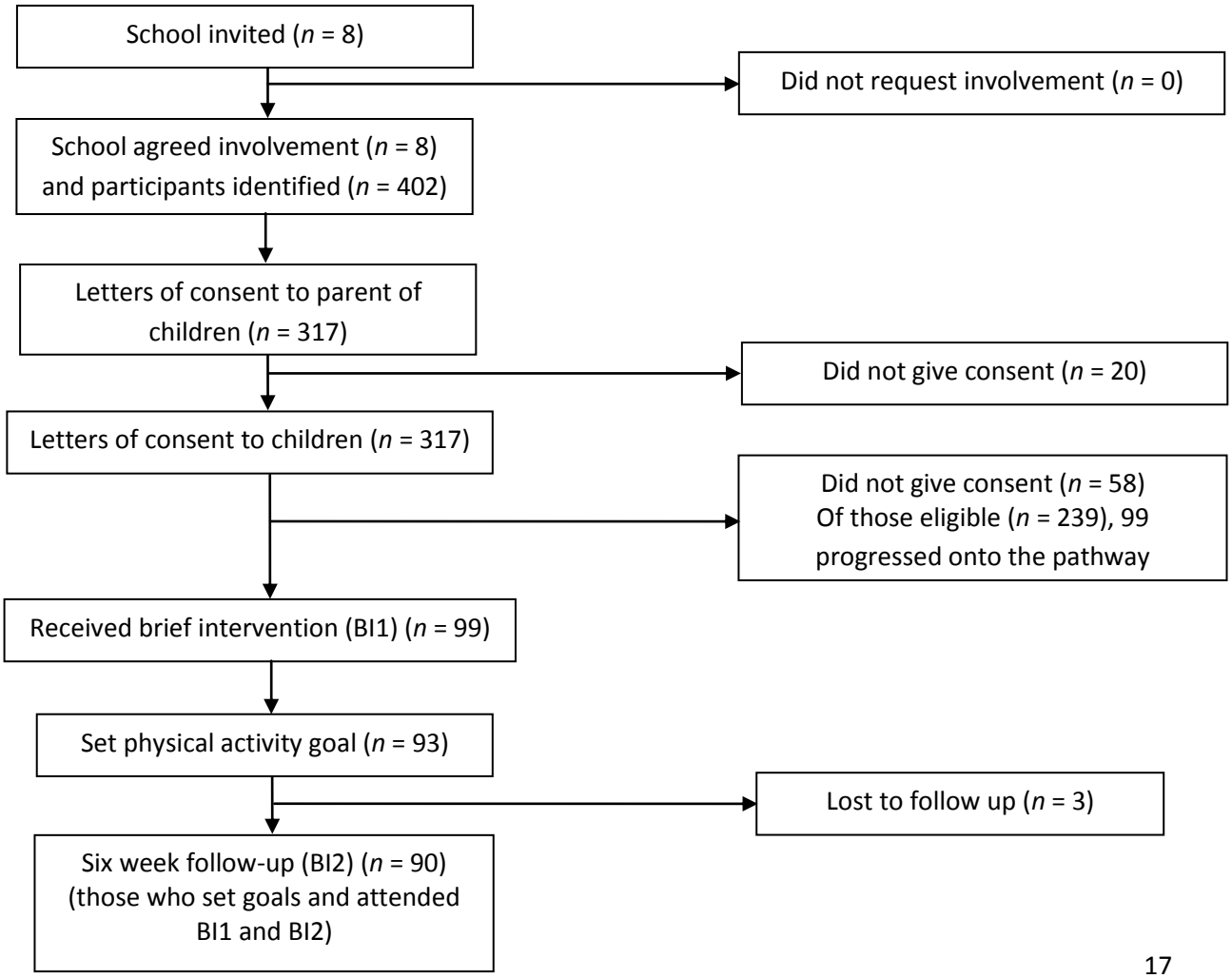
5. Evaluation findings

This section presents findings from quantitative and qualitative analysis and the costs per child of delivering the intervention.

5.1 Quantitative findings

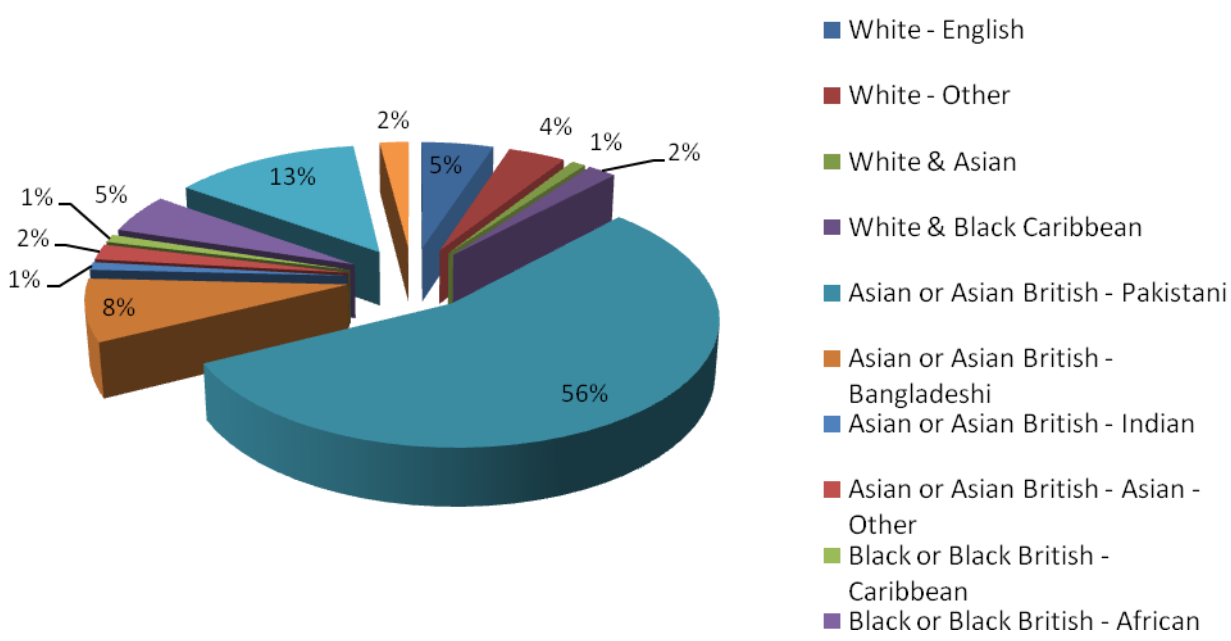
Participant progress through the pathway is shown in Figure 2. All eight schools invited to participate in the pathway indicated that they were happy to be involved. Having followed the protocol, contact was made with 78.9% (*n* = 317) of those that could be contacted (*n* = 402) (Figure 2), of which 99 participants entered the pathway (31.2%). Ninety-three participants set physical goals at baseline; three were lost to follow up representing a pathway completion rate of 97% (*n* = 90).

Figure 2: Participant progress through the pathway



For those receiving the brief intervention, the mean participant age was 11.2±0.6 years and 56.6% were male (*n* = 56). Representation from the two year groups was evenly split, with 54% being drawn from Year 6 (*n* = 53) and 46% (*n* = 48) from Year 7. Analysis of postcode data indicated that more than 80% (*n* = 83) resided in an area that fell within the most deprived 20% of national rankings. In contrast, no participants lived in areas within the least deprived quintile. The majority of participants were of Asian and Asian British ethnic backgrounds. A more complete description is presented in Figure 3 below. More than three-quarters (68%, *n* = 67) were classified with a normal weight according to the UK 1990 BMI growth reference charts.[4] A full description of key potential explaining variables including school year, Index of Multiple Deprivation (IMD), Gender, Age, and Weight Category according to Body Mass Index (BMI), is provided in Table 2 overleaf.

Figure 3: Ethnic background of YPPAP participants



[4] Those within the second to ninety-first centiles are classified as 'normal' weight.

Table 2: Key potential explaining variables

				School							
		Total (n)	*%*	*Ward End*	*St. Alban's Academy*	*Clifton*	*Hodge Hill Primary*	*Hodge Hill Secondary*	*Small Heath*	*Colebourne*	*Hodge Hill Girls' School*
School Year	Year 6	52	52.5	15	0	16	2	0	0	19	0
	Year 7	47	47.5	0	22	0	0	11	12	0	2
Age	Mean age	11.2± .56	-	10.6±.32	11.7±.27	10.8±.28	10.8±.26	11.7±.36	11.7±.25	10.8±.33	11.7±.31
Gender	Male	56	56.6	7	15	8	2	5	9	10	0
	Female	43	43.4	8	7	8	0	6	3	9	2
Deprivation	Q1 (most deprived)	83	83.8	15	21	15	0	10	11	10	1
	Q2	15	15.2	0	1	1	1	1	1	9	1
	Q3	0	0.0	0	0	0	0	0	0	0	0
	Q4	1	1.0	0	0	0	1	0	0	0	0
	Q5	0	0.0	0	0	0	0	0	0	0	0
Ethnicity	White British	5	5.1	1	1	0	0	1	0	1	1
	Dual heritage	3	3.0	1	0	0	0	2	0	0	0
	Asian/Asian British	66	66.7	10	9	9	2	5	12	18	1
	Black/Black British	6	6.1	0	4	1	0	1	0	0	0
	Other	19	19.2	3	8	6	0	2	0	0	0
Weight Cat*	Underweight	4	4.0	1	1	1	0	0	0	1	0
	Normal	67	68.0	10	15	11	2	9	9	9	2
	Overweight	14	14.0	4	1	1	0	0	1	7	0
	Obese	13	13.0	0	4	3	0	2	2	2	0

* UK 1990 BMI growth reference chart classifications

Figure 4 provides an overview of the composite physical activity scores according to the PAQ-C at BI1. Approximately half of the participants scored 3 on a scale, where 1 indicates a low level of physical activity and 5 indicates a high level of physical activity. No participant scores exceeded 5 across the whole sample.

Figure 4: Composite Physical Activity Scores BI1

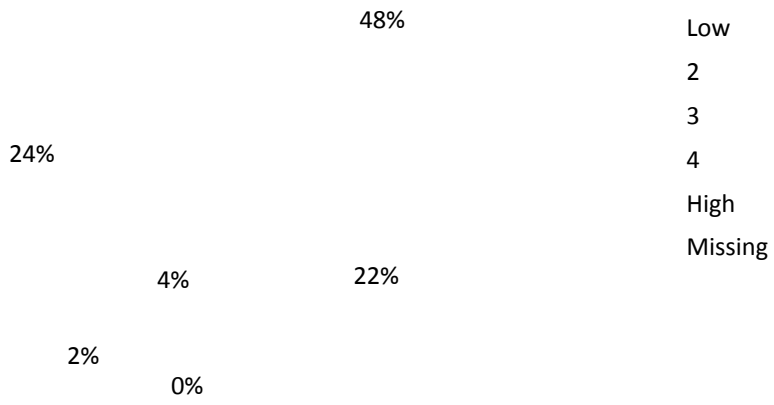
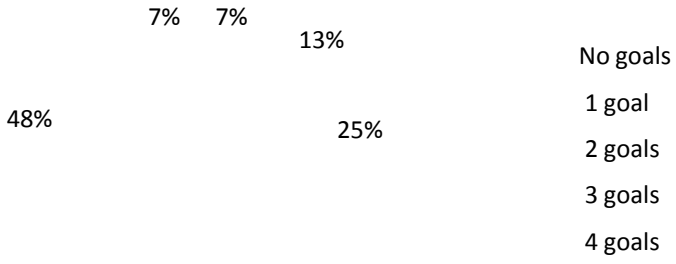


Figure 5 presents the data for the number of goals set by participants at BI1. 93 of the 99 participants who entered the pathway set goals, with nearly half of these setting 3 physical activity goals. In total, 232 physical activity goals were set during the pathway (mean = 2.5 goals per participant, excluding the 6 who did not set any goals).

Figure 5: Number of goals set at BI1



Approximately half of participants (*n* = 47) set 3 physical activity goals. More than half of girls (51.2%, *n* = 22) set 3 physical activity goals in comparison to boys (44.6%, *n* = 25). Interestingly, all girls set at least 1 goal during the pathway, whereas 7 boys did not set any goals. For those participants who set at least one goal, the most popular choices were 'organised' and 'in school' activities. The least popular choice was 'individual sport' (Table 3).

Table 3: Nature of goals at BI1

	*Yes**	
Goal type	*n*	*%*
Organised	75	81.5
In school	75	81.5
With others	71	77.2
Independent	67	72.8
Outside school	67	72.8
Team Sport	44	47.8
On own	43	46.7
Individual sport	34	37.0

*% of the 93 participants who set any goals. Participants were able to make multiple choices across the 8 responses.

Participants selected a variety of activities across each of the goal types (Table 4), including unstructured physical activity, sports club-based activities and those which required different levels of equipment and skill. These choices reflected the wide range of opportunities that were identified, and made available, by the intervention staff.

Table 4: Example goals set by participants

Physical activity-based goals	*Sports-based goals*
▪ Walk to school, walk to mosque	▪ Join after school athletics club
▪ Go swimming with Dad	▪ Go to table-tennis once a week
▪ 12000 steps a day	▪ Join cricket club, Wednesdays after school
▪ Join in break and lunch time activities	▪ Attend martial arts club in evenings
▪ Join girls' youth club, Saturday mornings	▪ Go to Tri Golf on Thursdays
▪ Skipping at break time - 10 minutes	▪ Join football club at school, Wednesdays
▪ Play outside with family and friends	▪ Volleyball club before school
▪ After school street dance club	▪ Morning table tennis, Wednesdays and Fridays

At follow up, 70.7% (*n* = 70) of participants had achieved at least one goal in full and nearly 80% (*n* = 79) had fully or partly achieved at least one goal (see Figure 6).

Figure 6: Percentage of goals achieved in full or in part

Note: In total, 9 participants did not set goals or did not attend the follow up interview.

Table 5 (overleaf) presents data concerning the comparison of physical activity scores at baseline (BI1) and follow up (BI2) for all schools in the pilot. The mean physical score for all participants at baseline (BI1) was 3.03 (SD = 0.67) compared to 3.06 (SD = 0.60) at follow up. Frequency of physical activity at baseline (BI1) was 3.06 sessions per week (SD = 0.82) compared to 3.21 (SD = 0.92) at follow up. Physical activity session undertaken in spare time for all participants was 1.64 (SD = 0.40) compared to 1.75 (SD = 0.45) at follow up. Ward End School returned the greatest nominal increase in mean physical score during the pilot (increase of 0.32, *n* = 15) in comparison to Small Heath which experienced a decrease in overall mean physical activity score (decrease of 0.32, *n* = 12).

Table 5: Physical activity at baseline versus follow-up

		Baseline			*Follow-up*		
		PA spare time	*PA freq*	*PA summary score*	*PA spare time*	*PA freq*	*PA summary score*
Total (all schools)	Mean	1.64	3.06	3.03	1.75	3.21	3.06
	SD	0.40	0.82	0.67	0.45	0.96	0.60
Ward End	Mean	1.68	2.88	3.02	1.83	3.08	3.34
	SD	0.44	0.80	0.77	0.37	1.00	0.70
St. Alban's Academy	Mean	1.81	3.36	2.88	1.83	3.53	2.98
	SD	0.50	0.81	0.70	0.66	1.16	0.64
Clifton	Mean	1.61	3.02	3.29	1.88	3.37	3.16
	SD	0.31	0.66	0.49	0.35	0.71	0.53
Hodge Hill Primary	Mean	1.17	3.14	2.42	1.51	2.50	2.56
	SD	0.12	1.41	0.38	0.11	0.10	0.00
Hodge Hill Secondary	Mean	1.54	2.59	2.66	1.45	3.18	2.86
	SD	0.30	0.70	0.38	0.20	0.97	0.30
Small Heath	Mean	1.64	3.51	3.23	1.64	3.08	2.91
	SD	0.31	0.65	0.71	0.32	0.90	0.65
Colebourne	Mean	1.59	3.02	3.28	1.80	3.07	3.20
	SD	0.40	0.88	0.65	0.44	0.88	0.58
Hodge Hill Girls' School	Mean	1.37	1.64	2.02	1.43	2.29	2.36
	SD	0.34	0.10	0.36	0.12	1.21	0.24

Note: Sample size prevented meaningful analysis at school-level.

Results indicated that the increase in 'spare time' physical activity was statistically significant ($t_{(95)}$=-2.88, p=.005), but the differences were not significant for overall physical activity ($t_{(95)}$=-.096, p=.924) (Mean = .0058, SD = 0.59), or mean frequency of physical activity ($t_{(95)}$=-.414, p=.680). Descriptive data for the PAQ-C items relating to physical activity are available in Appendix B. Analysis also revealed that the correlation between change in physical activity and the number of goals set by participants was not significant (*r* = 0.08, *p* =.436) (Table 7).

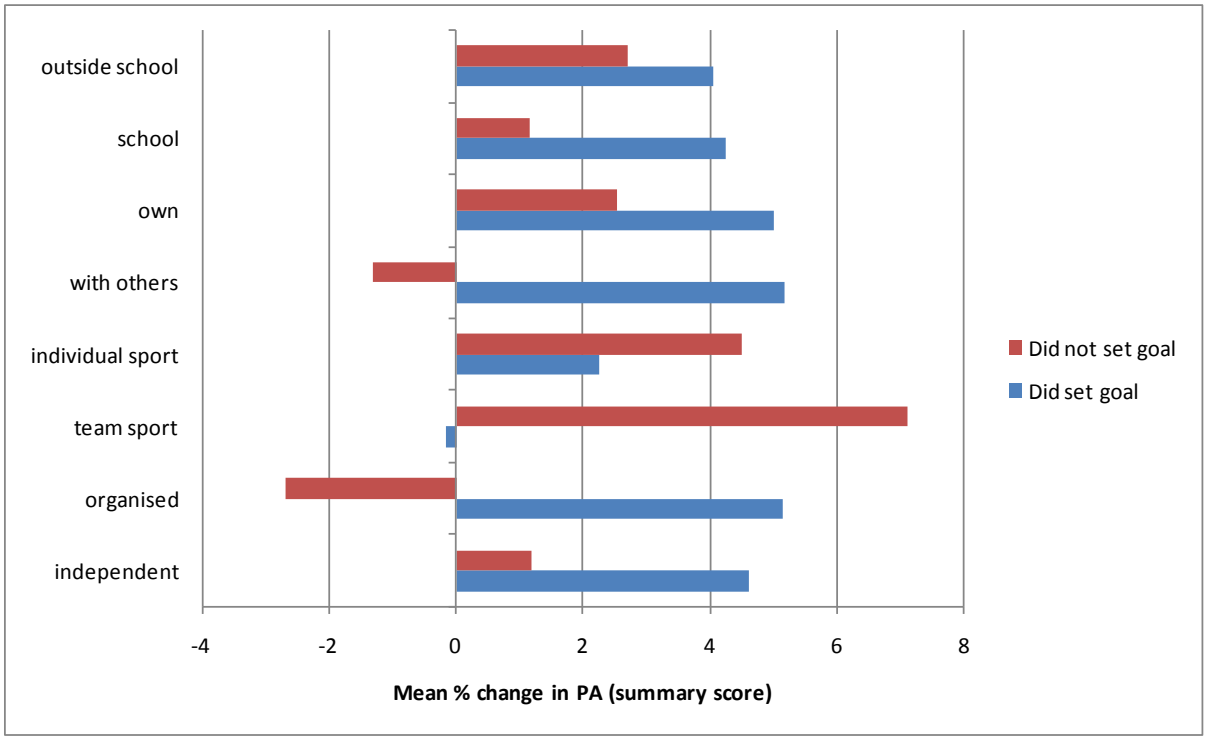
Table 6: Physical activity change in those who did versus did not set certain types of goal

Goal type		Group Statistics				
		N	*Mean*	*SD*	*T*	*p*
Any goals - independent	No	25	-0.06	0.62	-0.98	0.329
	Yes	67	0.07	0.57		
Any goals - organised	No	17	-0.13	0.41	-1.34	0.185
	Yes	75	0.08	0.62		
Any goals - team sport	No	48	0.12	0.60	1.42	0.160
	Yes	44	-0.05	0.57		
Any goals - individual sport	No	58	0.06	0.55	0.56	0.574
	Yes	34	-0.01	0.65		
Any goals - with others	No	21	-0.13	0.55	-1.54	0.128
	Yes	71	0.09	0.59		
Any goals - own	No	49	0.00	0.60	-0.64	0.527
	Yes	43	0.08	0.58		
Any goals - school	No	17	-0.07	0.60	-0.83	0.408
	Yes	75	0.06	0.59		
Any goals - outside school	No	25	-0.01	0.58	-0.45	0.655
	No	67	0.05	0.59		

Note: Independent samples t-tests showed that no changes were statistically significant

Figure 7 (overleaf) demonstrates that there are some non-significant differences in change in physical activity (follow-up compared to baseline physical activity summary score) between those participants who did, versus those participants who did not, set any goals (for most types). The magnitude of change was, however, very small. Interestingly, for those who did set physical activity goals 'with others' and 'organised' physical activity, accounted for the greatest increases whilst 'team sport' represented a decrease in overall physical activity score. For those who did not set any physical activity goals 'team sport' accounted for the greatest increase in overall score in comparison to 'organised' which accounted for the greatest decrease in physical activity score.

Figure 7: Mean change in summary physical activity score



Note: The results should be interpreted with caution due the large standard deviations in comparison to the relatively small percentage changes in physical activity levels (see Appendix C).

5.2 Qualitative findings

The following qualitative findings represent the synthesis of key themes identified in the group interviews and data collected via the YPPAP pathway booklet.

Participants identified *educational benefits* as a key aspect of the pathway; '...we've learned about how you can get really ill if you carry on eating junk food and don't do any physical activity, you get diabetes and things like that.' These benefits were realised through direct interaction with intervention staff and reflected on during participation in physical activity over the course of the pathway. Benefits, including knowledge of positive dietary and physical activity habits, helped participants to understand the potential consequences of certain behaviours and allowed them develop a heightened sense of self-awareness. This inspired participants to think about what they ate and how often they undertook physical activity. The outcome of this was reflected in a sense of satisfaction concerning the pathway and a new sense of empowerment concerning their personal

physical and mental health. For some participants this had led to a hunger for new physical activity experiences and knowledge concerning the relationship between dietary habits and their health; '...you could watch your weight, see what it is and keep checking it. You can see how you're burning calories, what your using every day. I'd like to keep checking I'm eating healthy stuff and see how many calories I'm burning.'

The main *constraints to participation* in physical activity were inclement weather, a lack of time and family commitments; 'my dad was working and there was no one else to take me.' Other general constraints identified by participants included a lack of personal motivation, not having any friends to go to physical activity sessions with, and problems with the running and administration of the sessions. At worst, the outcome of these factors was the inability to undertake physical activity. For example, some participants related that the sessions they had wanted to do had been oversubscribed, preventing them from taking part; 'there were too many people at the club and I had to stand around too much, I didn't like it'. Whilst it was recognised that certain constraints were insurmountable, at least in the short term, the main factors that moderated, or offset, these constraints included familial and peer support: '...it was more fun playing outside when friends and family were there.'

In respect of *harnessing pathway potential* and its attributes, learning, personal challenge, physical activity preference and a sense of fun were identified as key drivers of participation. One particular factor articulated by participants was physical activity targets;

I *'... you remember you had set targets, was that useful?*
All *Yes.*
I *Why was that useful?*
A *Because like, if we did do a lot of exercise its good to have a target of when we're going to do this and that...*
I *So were you thinking about your targets when you were doing exercise?*
All *Yes.*
I *So you really wanted to sort of hit those targets, was that good?*
A *Yes.*
I *Did you set your targets yourself?*
A *Yes.*
I *And, how did that make you feel?*
A *Good, happy!*

These appeared to be critical to participation because they provided participants with a means of planning and structuring their behaviour in respect of their dietary and physical activity habits. The

one-to-one interaction with the intervention staff was instrumental in this respect, allowing participants to talk candidly about themselves, their concerns and personal preferences, without worrying about what their peers might think. As a consequence, the intervention staff was able to identify goals that were realistic and reflected the types of activities participants wanted to do or might like to try.

5.3 Cost of project delivery

In order to address D4, the project manager (TM) was consulted with regard to activities undertaken by the intervention staff. Overall, the overall management and administration of the project (basic hourly rate in addition to on-costs and associated travel) was just over £9,000 (Table 7). Taking into account other costs, including resources, training and support, the total cost per child of delivering the intervention was £143. In comparison with other regional findings on calculating intervention costs (see for example, University of Worcester, 2010) this would appear to be good value. However, bearing in mind that a full economic cost exercise was not possible, caution should be used when comparing with other seemingly like-for-like interventions.

Table 7: Project costs per child

	FTE	Children	Actual Cost £
School Sports Partnership Coordinator (TM) – overall management and administration of the project.	1 day per week x 8 months		£9200
Travel costs for TM (incl. school visits & associated travel)			(Included in £9200 above)
YPPAP deliverers (School sports coordinators (SSCo) - 4 individuals working 1 day a week @ £150 per day x 4 months		99 x 2 appointments each	£4300
Training & support costs - 1 x SSCo training workshop (1/2 day) (incl. Brief Intervention trainer costs)			£790
Resources for project (letters, informed consent, YPPAP booklets) (317 children received a letter to parent, letter to child, informed consent to parent, informed consent to child and a YPPAP booklet)			£35
TOTAL PROJECT COST			**£14125**
COST PER CHILD			**£143**

6. Discussion and Conclusion

This section contextualises the research findings and addresses the research questions corresponding to each deliverable identified in Section 2.

1. Are schools a feasible setting for such a physical activity care pathway (including opportunities and barriers)? (D1).

   The results showed that more than 300 children were made aware of the pathway across the eight schools involved, of which 99 entered the pathway (31.2%). These children represented a range of backgrounds and personal characteristics, including those classified as overweight and obese (27%, *n* = 27). The high (97%) pathway completion rate, i.e., those introduced to the pathway at BI1 and who attended BI2, suggests that school-based settings are effective in sustaining participants throughout the pathway. Whilst it is not possible to determine the effect of the intervention staff directly, participants indicated that there were a range of opportunities made known to them. This highlights the importance of providing participants with up to date and relevant information so that individual preferences can be catered for. This lends support to the research of Naylor et al. (2008), who found that providing specific training and resources for schools might have a positive effect on children's physical activity levels.

2. What evidence is there for physical activity behaviour change in young participants during the course of the pilot? Is the pathway effective at creating behaviour change in the short term? (D1).

   Quantitative data suggested a non significant finding regarding changes in total physical activity. It is possible that the small sample size and a number of other potential confounding variables had an effect, including the inclement weather experienced during the pathway duration, the time of the intervention i.e. over the Christmas holiday period, and the generally moderate levels of physical activity reported by participants overall. The qualitative data suggested that the pathway led to an improvement in participant's knowledge and awareness of health and wellbeing, the role of physical

activity and the types of physical activity opportunities available to them in the community. Whilst some participants were not keen to repeat the pathway if invited again, this was not because the experience had been negative. They indicated a lack of interest in setting additional physical activity goals to complement existing participation, contentment with maintaining current habits without delimiting these to a specific set of goals.

3. Which physical activity services appear to be the most popular at the service delivery stage and what are the implications of this for current practice? (D2).

   The activities chosen by the participants reflected a range of physical activity preferences including 'organised', 'in school', 'with others', 'independent', and 'outside school'. These demonstrate that children were capable of formulating a wide range of physical activity goals. Although it is not possible to determine the level of satisfaction with the choices made available, it was apparent that by understanding and collating the precise number and type of opportunities within the local areas, participants could select a realistic set of goals that reflected local circumstances. Following Joens-Matre et al. (2008), who report that children's physical activity may vary at a local level, the pathway provides an example of good practice in which participants' preferences appeared to be well-aligned with local opportunities.

4. What can we learn by comparing the physical activity options chosen by young participants and outcomes regarding increases in levels of physical activity? (D2).

   The findings of the study do not allow the exploration of this due to the limited sample size. Conducting the pathway over a longer period, recruiting a larger sample, might lead to further analysis options in future interventions.

5. How does participation and adherence to physical activity and the care pathway itself vary with gender, class, ethnicity and disability status? (D3).

   The pathway attracted a range of participants which demonstrated its potential in securing the interest and motivation of participants. Unfortunately, the sample size was not sufficient for direct comparisons between gender, class, ethnicity, disability status

and adherence to the pathway or physical activity behaviour. Existing research using the PAQ-C reports differences between genders for physical activity levels after the completion of school-based interventions (Naylor *et al*., 2008). Running interventions that allow differences in physical activity participation and differences in adherence to pathways themselves may provide an important means of better understanding the effects of potential explaining variables on participation.

6. How much does the pathway cost to implement (in terms of money, people, time, etc) (D4).

   The total cost of delivering the intervention was £14,125. With 99 children taking part in the intervention this represented a cost-per-child of £143 for each successful completion.

7. Recommendations

As a result of the discussion and conclusions above, which are in turn based on the synthesis of considerable empirical evidence, we make the following recommendations:

Recommendation 1: The school setting could be used as a suitable place to attract and recruit children from wide ranging demographic profiles within a community for a physical activity intervention. Schools involved in programmes such as Healthy Schools could provide suitable settings should interventions of this type be replicated.

Recommendation 2: Through aligning with other available data, such as the child weight management programme data, the school setting can provide an opportunity for targeting and monitoring children in need of intervention (e.g., physical activity interventions aimed at overweight and obese children, and those identified as inactive) within a class-level or whole-school approach via the use of a screening tool).

Recommendation 3: In terms of the content of brief interventions with children, the initial pathway session needs to concentrate on setting an *achievable* number of goals, perhaps 1 or 2, within the intervention period to ensure these are sufficiently considered genuine goals, rather than a child's physical activity 'wish list'.

Recommendation 4: The success of the pathway in terms of recruitment and ease of data management was achieved through integration into the network of school sports coordinators and partnership managers. Whilst these positions are currently changing in their nature and prevalence, future pathways should attempt to integrate into the existing systems to ensure the smooth and efficient running of recruitment and delivery, and to ensure opportunities available for physical activity after progression through the pathway. Current reforms in the management and commissioning of public health in the community, for example the emergence of Health and Well-being Boards, could benefit from ensuring that the integration between relevant bodies in education, and deliverers of physical activity, is maintained and supported.

Recommendation 5: The intervention should avoid periods of time where physical activity is difficult to maintain, such as during school holidays and the winter months. It is recommended

that intervention periods are designed so that they run concurrent with school terms to reflect the changing nature of available physical activity opportunities and the level of support available to increase the likelihood for children to meet their goals.

Recommendation 6: In terms of the physical activity opportunities available, a physical activity programme that meets the needs of inactive children, perhaps team-based activities (as opposed to sport-based competitive programmes) where the focus is on participation, skill development and 'active play' activities should be integrated into the pathway. This may be particularly pertinent where the pathway is introduced into more rural areas where physical activity provision may be more limited outside of the traditional 'sport-based' opportunities. Additionally it may also be helpful to have the option of a 6 week 'taster' programme as an avenue for inactive children especially if, due to the economic climate, extra-curricular activities are less available than previously. Given the forthcoming London 2012 Olympic Games, there is the potential to enthuse young people about physical activity, through the promotion of this event and associated legacy programmes.

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Appendix A: Participant booklets

Young People Physical Activity Pathway Project

Calthorpe Schools Sports Partnership.

PLEASE CHECK YOU HAVE THE FOLLOWING BEFORE YOU COMMENCE YOUR INTERVIEW

	PLEASE TICK
Parental Consent	
Child Consent	
Child's Unique ID Number	
Child's Height	
Child's Weight	
Details of the child	
Ethnicity of the child	
Details of activities available to the child	

Young People Physical Activity Pathway Project

Calthorpe Schools Sports Partnership.

INTERVIEWER PLEASE ANSWER ALL QUESTIONS

- **Child's Unique ID Number:**

- **Interviewer: _____**
- **Consent from parent received: Yes or No**
- **Consent from child received: Yes or No**
- ***Please do not attach this form keep them filed securely should they be required.***
- Date of planned Brief Intervention (BI) One: _____
- Venue for Brief Intervention: _____
- Brief Intervention One attended: Yes or No
- If **NO,** please give reason (if any): _____

DETAILS OF THE CHILD

Gender : Male or Female (please circle)

- **D.O.B:** ___/____/___
- **Post Code:_____**
- **Height:** _____ Weight _____
- **Name of School:** _____
- **School Year:** _____
- **Is the child registered disabled?** : YES or NO
- **Is the child registered as SEN**? YES or NO
- **Is the child registered as EAL**? YES or NO

ETHNICITY (please tick the appropriate box)

- **White** ☐ English ☐ Scottish ☐ Welsh ☐ Irish ☐ Other
- **Dual Heritage** ☐ White & Black Caribbean ☐ White & Black African ☐ White & Asian ☐ Other
- **Asian or Asian British** ☐ Indian ☐ Pakistani ☐ Bangladeshi ☐ Other
- **Black or Black British** ☐ Caribbean ☐ African ☐ Any Other
- **Any Other Ethnic Group** ☐ Chinese ☐ Travellers ☐ Yemeni ☐ Other
- **Do not wish to State** ☐

PART TWO: PHYISCAL ACTIVITY QUESTIONAIRE (PAQ- C UK VERSION)

We are trying to find out about your level of physical activity from **the last 7 days** (in the last week). These includes sports or dance that make you sweat or make your legs feel tired, or games that make you breathe hard like tag, skipping, running, climbing and others.

Remember:

- There are no right or wrong answers – this is not a test
- Please answer all the questions as honestly and accurately as you can – this is very important

1. Physical activity in your spare time:
Have you done any of the following activities in **the past 7 days** (last week)? If yes, how many times? (Tick one per row only)

	0	**1-2**	**3-4**	**5-6**	**7 or more**
Skipping	○	○	○	○	○
Rowing/ canoeing	○	○	○	○	○
Roller skating/ roller blading	○	○	○	○	○
Tag	○	○	○	○	○
Walking for exercise	○	○	○	○	○
Bicycling	○	○	○	○	○
Jogging or running	○	○	○	○	○
Group exercise	○	○	○	○	○
Swimming	○	○	○	○	○
Cricket	○	○	○	○	○
Dance	○	○	○	○	○
Football	○	○	○	○	○
Badminton	○	○	○	○	○
Skateboarding	○	○	○	○	○

Rugby	○	○	○	○	○
Hockey	○	○	○	○	○
Volleyball	○	○	○	○	○
Basketball	○	○	○	○	○
Ice skating	○	○	○	○	○
Snow/ dry slope skiing	○	○	○	○	○
Ice hockey	○	○	○	○	○
Other (please specify)	○	○	○	○	○
Other (please specify)	○	○	○	○	○

2. **In the last 7 days**, during your physical education (PE) classes, how often were you very active (playing hard, running, jumping, throwing)? (Tick one only).

I don't do PE	○
Hardly ever	○
Sometimes	○
Quite often	○
Always	○

3. **In the last 7 days**, what did you do most of the time at *break*? (Tick one only).

Sat down (talking, reading, doing schoolwork)	○
Stood around or walked around	○
Ran or played a little bit	○
Ran around and played quite a bit	○
Ran around and played hard most of the time	○

4. In the last 7 days, what did you normally do at *lunch* (besides eating lunch)? (Tick on only)

Sat down (talking, reading, doing schoolwork) ○

Stood around or walked around ○

Ran or played a little bit ○

Ran around and played quite a bit ○

Ran around and played hard most of the time ○

5. In the last 7 days, on how many days *right after school*, did you do sports, dance or play games in which you were very active? (Tick one only)

None ○

1 time last week ○

2 or 3 times last week ○

4 times last week ○

5 times last week ○

6. In the last 7 days, on how many *evenings* did you do sports, dance or play games in which you were very active? (Tick one only).

None ○

1 time last week ○

2 or 3 times last week ○

4 or 5 times last week ○

6 or 7 times last week ○

7. On the last weekend, how many times did you do sports, dance or play games in which you were very active? (Tick one only).

None ○

1 time ○

2 - 3 times ○

4 - 5 times ○

6 or more times ○

8. Which of the following describes you best for the last 7-days? Read all five statements before deciding on the one answer that describes you.

A. All or most of my free time was spent doing things that involve little physical effort ○

B. I sometimes (1-2 times last week) did physical things in my free time (e.g. played sports, went running, swimming, bike riding, did aerobics) ○

C. I often (3-4 times last week) did physical things in my free time ○

D. I quite often (5-6 times last week) did physical things in my free time ○

E. I very often (7 or more times last week) did physical things in my free time ○

9. Mark how often you did physical activity (like playing sports, games, doing dance, or any other physical activity) for each day last week (please tick one response for each day).

	None	**Little bit**	**Medium**	**Often**	**Very often**
Monday	○	○	○	○	○
Tuesday	○	○	○	○	○
Wednesday	○	○	○	○	○
Thursday	○	○	○	○	○
Friday	○	○	○	○	○
Saturday	○	○	○	○	○
Sunday	○	○	○	○	○

10. Were you sick last week, or did anything prevent you from doing your normal physical activities? (Tick one).

Yes ○

No ○

If yes, what prevented you?

……
……
……..

Part 3: Brief Intervention

1: Does the child want to make a physical activity goal? **Yes or No**

If NO please give reason why:

_____
_____
_____
_____
_____
_____

If yes, please detail each goal made and then tick the category(s) it resides in, like the example given in the first row.

Please detail each PA goal which should include activity:	Frequency	Independent	Organised	Team sport	Individual sports	With others	On own	In school	Outside school
EXAMPLE: **To cycle to school**	**EXAMPLE:** **2 x per week**	✓					✓		✓
1.									
2.									
3.									
4.									

- **Brief Intervention 2**
- **If YES - Date Arranged: _____**
- **Time of Interview:_____**
- **Venue of Interview _____**
- **If NO please ask then for their reason/s**

SECTION TWO: BRIEF INTERVENTION TWO

PART ONE: GENERAL INFORMATION

Child's Unique Number:

- **Date of Planned Brief Intervention (BI) TWO: _____**
- **Venue of BI _____**
- **Brief Intervention TWO attended? YES or NO. If NO, please state reason given (if any): _____**
- **Height _____**
- **Weight _____**

PART TWO: PHYISCAL ACTIVITY QUESTIONAIRE (PAQ- C UK VERSION)

We are trying to find out about your level of physical activity from **the last 7 days** (in the last week). These include sports or dance that make you sweat

or make your legs feel tired, or games that make you breathe hard like tag, skipping, running, climbing and others.

Remember:

- There are no right or wrong answers – this is not a test
- Please answer all the questions as honestly and accurately as you can – this is very important

1. Physical activity in your spare time:

Have you done any of the following activities in **the past 7 days** (last week)? If yes, how many times? (Tick one per row only.)

	0	**1-2**	**3-4**	**5-6**	**7 or more**
Skipping	○	○	○	○	○
Rowing/ canoeing	○	○	○	○	○
Roller skating/ roller blading	○	○	○	○	○
Tag	○	○	○	○	○
Walking for exercise	○	○	○	○	○
Bicycling	○	○	○	○	○
Jogging or running	○	○	○	○	○
Group exercise	○	○	○	○	○
Swimming	○	○	○	○	○

Cricket	○	○	○	○	○
Dance	○	○	○	○	○
Football	○	○	○	○	○
Badminton	○	○	○	○	○
Skateboarding	○	○	○	○	○
Rugby	○	○	○	○	○
Hockey	○	○	○	○	○
Volleyball	○	○	○	○	○
Basketball	○	○	○	○	○
Ice skating	○	○	○	○	○
Snow/ dry slope skiing	○	○	○	○	○
Ice hockey	○	○	○	○	○
Other (please specify)	○	○	○	○	○
Other (please specify)	○	○	○	○	○

2. **In the last 7 days**, during your physical education (PE) classes, how often were you very active (playing hard, running, jumping, throwing)? (Tick one only).

I don't do PE ○

Hardly ever ○

Sometimes ○

Quite often ○

Always ○

3. **In the last 7 days**, what did you do most of the time at *break*? (Tick one only)

Sat down (talking, reading, doing schoolwork) ○

Stood around or walked around ○

Ran or played a little bit ○

Ran around and played quite a bit ○

Ran around and played hard most of the time ○

4. In the last 7 days, what did you normally do at *lunch* (besides eating lunch)? (Tick one only)

Sat down (talking, reading, doing schoolwork) ○

Stood around or walked around ○

Ran or played a little bit ○

Ran around and played quite a bit ○

Ran around and played hard most of the time ○

5. In the last 7 days, on how many days *right after school*, did you do sports, dance or play games in which you were very active? (Tick one only)

None ○

1 time last week ○

2 or 3 times last week ○

4 times last week ○

5 times last week

6. In the last 7 days, on how many *evenings* did you do sports, dance or play games in which you were very active? (Tick one only).

None ○

1 time last week ○

2 or 3 times last week ○

4 or 5 times last week ○

6 or 7 times last week ○

7. On the last weekend, how many times did you do sports, dance or play games in which you were very active? (Tick one only).

None ○

1 time ○

2 - 3 times ○

4 - 5 times ○

6 or more times ○

8. Which of the following describes you best for the last 7-days? Read all five statements before deciding on the one answer that describes you.

A All or most of my free time was spent doing things that involve little physical effort ○

B I sometimes (1-2 times last week) did physical things in my free time (e.g. played sports, went running, swimming, bike riding, did aerobics) ○

C I often (3-4 times last week) did physical things in my free time ○

D I quite often (5-6 times last week) did physical things in my free time ○

E I very often (7 or more times last week) did physical things in my free time ○

9. Mark how often you did physical activity (like playing sports, games, doing dance, or any other physical activity) for each day last week (Please tick one for each day).

	None	**Little bit**	**Medium**	**Often**	**Very often**
Monday	○	○	○	○	○
Tuesday	○	○	○	○	○
Wednesday	○	○	○	○	○
Thursday	○	○	○	○	○
Friday	○	○	○	○	○
Saturday	○	○	○	○	○
Sunday	○	○	○	○	○

10. Were you sick last week, or did anything prevent you from doing your normal physical activities? (Tick one).

Yes ○

No ○

If yes, what prevented you?

……
……
……

Part 3: BRIEF INTERVENTION

1. Refer back to the PA goals made in section 3 on page 5. In the table below remind the child of their goals and discuss each one and detail if they were met 1. In full / partially / or not at all. Please explain that it isn't important if they didn't and to tell the actual answer.

   Please detail each goal made from the previous table and then tick the achievement category it resides in, either Achieved, Partially achieved or not achieved. The example given in the first row has a response in each to demonstrate the detail required, in your responses there will only be one achievement category completed.

Previous PA goal:	Frequency	Achieved	Partially achieved	Not at all
EXAMPLE: **To cycle to school**	**EXAMPLE** **2x per week**	**EXAMPLE:** **Cycle to school on wed and Fri with brother**	**EXAMPLE:** **Cycle on Mondays only**	**EXAMPLE:** **Unable to due to bike theft.**
1.				
2.				
3.				

4.				

2: What were the reasons that have helped you achieve or prevented you from achieving your goals?

1. _____
2. _____
3. _____
4. _____
5. _____

3 What are the child's opinions of the project? Please detail:

_____
_____
_____

4. Have they made any changes to their lifestyle whilst taking part in the project i.e. changes to transport to and from school, diet, etc: If YES, what? Please detail_____
_____
_____

Appendix B: Descriptive data for PAQ-C items

	Baseline		*Follow-up*	
How often very active during PE (last 7 days)	*n*	*%*	*n*	*%*
I don't / didn't do P.E.	3	3	0	0
Hardly ever	28	28.3	17	17.2
Sometimes	36	36.4	41	41.4
Quite Often	30	30.3	35	35.4
Always	99	100	96	97
Missing			3	3
What do most in breaks (last 7 days)	*n*	*%*	*n*	*%*
Sat down (talking, reading, doing schoolwork)	21	21.2	17	17.2
Stood around or walked around	17	17.2	16	16.2
Ran or played a little bit	31	31.3	27	27.3
Ran around and played a bit	23	23.2	26	26.3
Ran around and played quite hard most of the time	99	100	96	97
Missing			3	3
What do at lunch (last 7 days)	*n*	*%*	*n*	*%*
Sat down (talking, reading, doing schoolwork)	17	17.2	15	15.2
Stood around or walked around	9	9.1	17	17.2
Ran or played a little bit	29	29.3	21	21.2
Ran around and played a bit	33	33.3	40	40.4
Ran around and played quite hard most of the time	98	99	97	98
Missing	1	1	2	2
Days very active right after school (last 7 days)	*n*	*%*	*n*	*%*
None	32	32.3	30	30.3
1 time last week	19	19.2	30	30.3
2 or 3 times last week	18	18.2	7	7.1
4 times last week	18	18.2	21	21.2
5 times last week	10	10.1	7	7.1
Missing	2	2	4	4
Evenings very active (last 7 days)	*n*	*%*	*n*	*%*
None	16	16.2	18	18.2
1 time last week	20	20.2	31	31.3
2 or 3 times last week	29	29.3	25	25.3
4 or 5 times last week	19	19.2	15	15.2
6 or 7 times last week	14	14.1	7	7.1
Missing	1	1	3	3
Times very active last weekend	*n*	*%*	*n*	*%*
None	7	7.1	12	12.1
1 time	16	16.2	14	14.1
2 - 3 times	37	37.4	42	42.4

4 - 5 times	25	25.3	19	19.2
6 or more times	14	14.1	9	9.1
Missing			3	3
7 day physical activity recall description	*n*	*%*	*n*	*%*
All / most of my free time was spent doing things that involve little physical effort	12	12.1	8	8.1
I sometimes (1-2 times last week) did physical things in my free time (e.g. played sports, running, swimming, bike riding, aerobics)	25	25.3	17	17.2
I often (3-4 times last week) did physical things in my free time	27	27.3	26	26.3
I quite often (5-6 times last week) did physical things in my free time	23	23.2	33	33.3
I very often (7 or more times last week) did physical things in my free time	11	11.1	10	10.1
Missing	1	1	5	5

Appendix B: Mean percentage change in physical activity scores by goal type

Goal type	*Set Goal*	*Mean % change*	*N*	*Std. Deviation*
Any goals - independent	No	1.1965	25	23.34349
	Yes	4.6126	66	20.39635
Any goals - organised	No	-2.6885	17	13.40709
	Yes	5.1358	74	22.39375
Any goals - team sport	No	7.109	48	23.36987
	Yes	-0.1603	43	17.90365
Any goals - individual sport	No	4.484	58	20.00705
	Yes	2.2505	33	23.32472
Any goals - with others	No	-1.3162	21	20.43628
	Yes	5.1712	70	21.29764
Any goals - own	No	2.533	49	22.72332
	Yes	5.0053	42	19.38528
Any goals - school	No	1.1686	17	23.13259
	Yes	4.2497	74	20.81795
Any goals - outside school	No	2.7106	25	23.13697
	No	4.0391	66	20.55038