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The Physical Activity Signposting Scheme (PASS): The A-CLASS project survey

Whilst the benefits of physical activity for children have been well documented, about 50% of children are not achieving recommended levels that would benefit their health (Biddle et al, 2004). Not only is inactivity related to poor health but sedentary habits also increase children's risk of becoming overweight or obese (Salmon et al, 2005).

As some children are not participating in the required amount of physical activity it is important that factors, that lead children to undertake activity, are investigated. According to Welk (1999) a number of factors determine youngster's participation in physical activity. These determinants need to be acknowledged in order to augment physical activity levels. The Youth Physical Activity Promotion model (YPAPM) (Welk, 1999) includes developmental, psychological and behavioural determinants of physical activity promotion in young people. The YPAPM model also suggests that there are a number of inter-relating variables that influence the promotion of physical activity. These are: Enabling, Predisposing, Reinforcing and Personal Demographics factors.

Whilst the YPAPM model has been proposed by Welk, few lifestyle interventions have successfully reduced sedentary behaviour and increased physical activity levels in children (Campbell et al, 2001). Robinson (1999) carried out a curriculum-based intervention, which included strategies such as self-monitoring

and budgeting of TV use. This study resulted in reductions in TV use and body weight, although there was no increase in physical activity. According to the displacement hypothesis, sedentary behaviours could replace more active behaviours (BHF, 2000) although this is not clear as some very active children also demonstrate high levels of sedentary behaviour such as TV watching time (Biddle et al. ,2004). Therefore intervention programmes should aim to reduce sedentary activities, as well as increase physical activity.

The Switch-Play program (Salmon et al., 2006) aimed to reduce sedentary behaviour, as well as increase physical activity. This study provided evidence to support programmes that combined physical activity and decreasing sedentary behaviours in a lifestyle intervention.

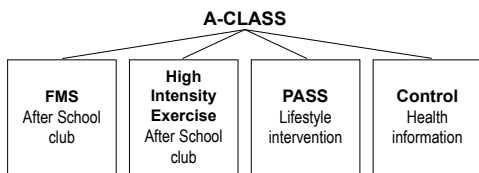
In Liverpool we have built on previous physical activity promotion work and design and implemented a lifestyle intervention programme alongside other more structured approaches. This programme will focus on the children's interaction with the environment as well as predisposing factors such as self-efficacy and enjoyment. In addition, reinforcing factors will be acknowledged, by encouraging family and friend involvement through a lifestyle intervention. A lifestyle approach to increasing physical activity and reducing sedentary behaviour is being investigated as lifestyle activities appear to be more sustainable than structured

activities on reducing obesity (Bar-Or & Baranowski, 1994).

The Physical Activity Signposting Scheme (PASS)

PASS represents one of 3 physical activity interventions included in the A-CLASS project (see Ridgers et al, 2006). PASS is a lifestyle intervention, designed to increase children's physical activity levels and decrease sedentary behaviour, whereas the other groups use structured exercise (incorporating both Fundamental Movement Skills (FMS) and high intensity exercise). The fourth group is a control see Figure 1.

Figure 1. Outline of A-CLASS groups



Aims

The principal aim of the A-CLASS intervention is to increase children's activity levels and challenge sedentary behaviours.

Subsequently the aims of PASS, are to:

- ~ Assess children's physical activity levels during a lifestyle intervention.
- ~ Assess how self-efficacy influences physical activity levels
- ~ Assess if the environment has an impact upon the physical activity levels
- ~ Process evaluation about how children interact with the missions (tasks)

Project Overview

Procedure

Forty-five, 8-10 year old children from two primary schools in Liverpool took part in the study. The program was delivered to

a group of children at school in 4, 6 weekly blocks (half an hour per week) with a 6-week break between each block. Each weekly session consisted of a discussion of the previous week's task followed by the delivery of the subsequent week's physical activity task.

The design of the study is based upon action-research principles. When blocks of tasks are completed, the next set are designed as a result of feedback from interviews and focus groups. These focus groups and interviews take place with the children, parents and teachers.

At the time of writing the first two blocks of PASS have been completed. The focus group data from parents and teachers is being collected after block two and the next block of missions are being designed. See Figure 2 (opposite page), for an overview of the process.

The PASS intervention was designed to correspond with Welk's YPAP model. Tables 1 and 2 (opposite page) outline the tasks involved in PASS.

Behaviour change strategies in the current investigation are based upon prior successful approaches reported by Ory et al (2003). These include: Education, self-monitoring (pedometers, time spent in sedentary behaviours and physical activity) decision-making (intelligent TV viewing). Feedback and reinforcement were implemented (The children are rewarded at the end of each six weeks for completing all the missions).

The reward

A reward was introduced to motivate the children. The reward is used as an incentive to achieve a goal (Salomone et al, 2002). Each week a sticker was administered when a task was completed. If all the tasks in a block were completed then the children received a reward such as a t-shirt and water bottle. Some of the children reported that this reward was their motivation for completing the tasks.

Figure 2. Flow diagram of the PASS process

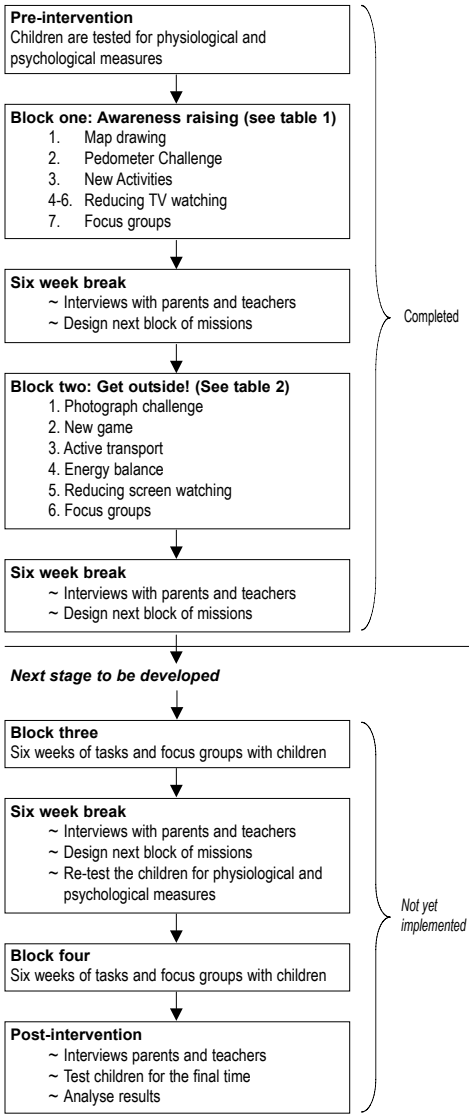


Table 1. Outline of the first block of tasks

| | |
|-------------------|---|
| Week one | Map drawing - the children drew a map of their local area and of their house. This increases awareness of what activities they already do and highlights what they could use and don't. |
| Week two | Pedometer challenge - this task asked the children to write down how many steps that they had achieved in a day for a week. |
| Week three | New activities - the task this week was to think of activities that they could do around the house, which didn't include watching television. |
| Week four | TV monitoring - this involved monitoring how much television that the children watched in a day. |
| Week five | Reducing TV viewing - Encouraged the children to reduce their television viewing to two hours a day, using intelligent viewing. |
| Week six | Reduce TV viewing - this task consisted of reducing the amount of TV that the children watched and also replacing TV viewing with physical activity. The pedometer challenge was also repeated in this task. |
| Week seven | Focus groups |

Table 2. Outline of the second block of missions

| | |
|-------------------|--|
| Week one | Photograph challenge. Disposable cameras were distributed to the participants.. This would be used throughout this block of tasks. Children's task was to take a walk in their local area and take pictures of places that they could be active or places that they are active. |
| Week two | New game. This week's challenge was to design their own game and take pictures of this game. |
| Week three | Active Transport. The children were encouraged to walk instead of taking the car or bus. |
| Week four | Energy balance. The concept of energy balance was introduced to the children. This task asked the children to rate what they ate and how much physical activity they did. They were given red, orange and green stickers, red was for food which you shouldn't eat too much of, and low levels of activity. |
| Week five | Reducing screen-watching behaviours. Reducing watching television and playing on computers was this week's task. Intelligent viewing was again introduced. The pedometer challenge was re-introduced. |
| Week six | Focus groups |

Parents, children's and teachers perceptions of PASS

Interviews and focus groups were undertaken with parents, teachers and children. The focus groups and interviews

were semi-structured, were carried out in groups of between 4 and 8 and were in a classroom during school hours. Interviews were recorded and qualitative data used in the action research design to inform planning the subsequent block of PASS.

Findings

All the children were unanimous in having enjoyed attending PASS, however some of the tasks were more popular than others. The tasks, which the children enjoyed the most included: Map drawing activity and Pedometer challenge.

Focus groups and interviews that provided an insight into how effective tasks were at changing behaviour and also provided key information about the underlying factors, which influence physical activity participation. The following vignettes provide an overview of these findings. The qualitative data gathered from participants after the first block of tasks suggests that children's physical activity increased.

'We got to do more activity than we used to do and it helped us instead of being lazy we got to be active'.

One of the factors, which may have affected the children's perception of an increase in physical activity, is enjoyment. The children enjoyed attending PASS. In addition the children enjoyed being more active.

'It was fun doing something active everyday instead of watching TV'.

However this was in contrast to a reluctance to carry out some of the tasks. The main task where some reluctance was evident was reducing television:

'I don't really like it when I can't watch the tele that much'.

Reducing television watching was described as:

'terrible, it was murder'.

Although the reducing television tasks were completed, it was rare if this behaviour change continued. The parents also reported that after the task was completed, the behaviour change did not continue:

'the week of the mission they would be [more active] but after this they go back to normal'.

To help sustain the behaviour change

after the week of the task the next block of tasks were designed to be fun, motivating and enjoyable. In addition, a camera was issued for the second group of tasks. These were kept for the whole six weeks and the children took a number of pictures of the different activities they do each week. The photographs act as evidence for having carried out the task, hopefully this will result in better task completion.

A major underlying factor that influences children to participate in the tasks is an increase in self-efficacy. The children now believe that they are capable of being more active:

'before I thought I was fat now I don't 'cos I'm more active.'

The children also feel better about themselves as they feel that they are more active. For example:

'I'm so happy that I'm getting more fit'.

Although some children found some of the tasks difficult, they still appear to have achieved them,

'I found it hard to stop watching TV, but I stopped it in the end' (watching no more than two hours a day).

Achieving a task, which the children initially found difficult, may increase their self-efficacy of the task and suggests that self-esteem could be improved as a result of the PASS programme. In return activity levels may be increased, as the children believe that they can be more active. Therefore tasks in the second block of work enabled children to be appropriately challenged.

The family also appears to have an impact on the child's participation in physical activity. However they may not always help their children, it appears that parents can be a hindrance. A lot of the children stated that a member of their family helped them with tasks and they appreciated this help. However some children found that their parents help was off-putting:

'my mum kept prodding me with the chart, this made me not want to do it'.

In addition to parents nagging their children to do the tasks, others were seen as a hindrance as they would not let their children do what they wanted to do, one child said:

'I had to nag mum to let me go outside because it was raining, she still wouldn't let me'.

Parents admitted that there were a number of reasons that they did not want their children going outside, these included safety and the weather. Parents also mentioned that at the end of the day at work it was too easy to say:

'just go on the computer or watch television, anything for peace and quiet'.

As the family has a great impact upon a child's physical activity levels, the second block of tasks aimed to encourage the family to be more involved. This is something most of the children were really enthusiastic about.

Initial findings from the 2nd block suggest that the parents think that the children are starting to lose interest and they need some more exciting tasks. However some of the children have perceived the second block as more challenging and therefore prefer it, whereas others 'can't be bothered.'

Conclusion

PASS aims to develop a sustainable lifestyle intervention to increase physical activity levels in 8-10 year old children. Focus groups and interviews with the children, teachers and parents, inform the next stage of research. The feedback from this qualitative data suggests that the PASS scheme is having a positive influence on children's activity levels and our use of other objective measures of physical activity may verify any self reported behaviour change. Practitioners may find this approach to physical activity promotion useful. The

children enjoy the challenges set each week and it is relatively simple and cheap to deliver.

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