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Liverpool Sporting Playgrounds Project

The purpose of this article is to provide an overview of the initial findings from the project to date and discuss baseline measures of physical activity, gender issues and school approaches to developing health promoting playgrounds.

Playtime is a break period, often held outdoors, for children during school time (Pellegrini, 1995). In Britain, children can experience up to 600 playtimes a year (based on 3 times a day, 5 days a week, 39 weeks a year; Stratton, 2000). Weather permitting, playtime occurs in the school playground, an area that varies greatly in size, shape, and the way that it is managed (Pellegrini, 1995). The playground is considered by children to be their domain (Evans, 1996), enabling them to engage in activities that are gradually more restricted elsewhere and allowing free interaction among similar aged peers (Pellegrini, 1995).

Playtime has an important role in children's physical and social development, affording children the opportunity to develop physical skills and confidence in their movement, and to build positive peer relationships (Evans, 1996). Children can also learn social skills such as sharing, cooperating, turn taking and the rules of a variety of playground games. Whilst playtime accounts for approximately one quarter of the school day (Evans, 1996) and one-fifth of a child's school life (Tizard et al., 1988), it lays claim to being the forgotten part of the school day (Blatchford, 1989). The extent to which playtime can contribute to a child's daily physical activity is greatly under researched.

Physical Activity - The Role of the School

It is widely acknowledged that physical activity is an integral part of a healthy lifestyle, and that engaging in regular physical activity can decrease the risk of obesity, coronary heart disease and diabetes (Biddle et al., 1998). It is recommended that children should engage in sixty minutes of moderate-to-vigorous physical activity (MVPA) a day (Biddle et al., 1998). However, there is concern that children are not engaging in sufficient daily physical activity in order to gain

health benefits associated with physical activity (Armstrong & Welsman, 1997).

Recently, the school has been identified as a suitable context for the promotion of physical activity and healthy lifestyles to children. The main opportunities for children to be physically active during the school day is during physical education (PE) lessons and playtime (Sarkin et al., 1997). Moreover, the promotion of a physically active lifestyle within the school environment has traditionally been undertaken through physical education lessons.

However, with concerns growing that curriculum time allocated towards PE is not meeting statutory expectations (Hardman & Marshall, 2000), playtime may offer an ideal alternative setting to promote children's physically active lifestyles. Additionally, school playgrounds have been identified as an alternative environment to PE where physical activity can be promoted to children and contribute towards daily physical activity guidelines (Stratton & Ridgers, 2003).

Playtime may develop positive attitudes towards physical activity and sport in general by offering children the opportunity to experience a number of different activities and developing fundamental movement skills which are key components of successful sports participation (van Beurden et al., 2003). Moreover, playtime has a positive impact on learning, with children more attentive in class when they experience regular breaks from their work (Pellegrini & Davis, 1993). In order for children to make choices about their playtime activities, schools should also provide adequate supervision and playground environments to facilitate this choice.

Zoneparc Playgrounds

A national Sporting Playgrounds Initiative has addressed the need for children to have the opportunity to engage in a variety

of activities and to access adequate facilities during playtime.

In May 2002, the DfES in partnership with Nike invested £10 million into the development of Sporting Playgrounds in 600 primary schools across England. The primary schools are situated within 27 Local Education Authorities. Over half of the schools involved in this national initiative chose to implement the Zoneparc playground developed by the DfES and Nike. Zoneparc playgrounds have two major aims:

- ♦ Tackle social exclusion and playground issues in schools
- ♦ Increase physical activity levels for young people

The Zoneparc playground involves the division of the playground into three specific colour coded areas. The specific areas are the Red, Blue and Yellow Zones. Zoning the playground is designed to contain dominant activities, provide a safe space for other activities to take place, and encourage children to participate in a number of activities, especially children who are intimidated by the playground context or excluded from games (DfES, 2005).

The Red Zone

The Red Zone is the sports zone, where children can engage in activities such as football, basketball, cricket and tennis. This area is often enclosed using fencing so that the domination of ball games such as football on the playground are restricted and children can engage in other activities in the available space (Evans, 1996). This area is important in the development of sports skills for children, and the static equipment such as goal posts can be used during playtime, PE lessons and for out of hours sports activities.

The Blue Zone

The Blue Zone is the action zone, where children can engage in games and activities

such as target work, fitness and skills. Typical markings in this area of the playground include clocks, compasses, hopscotch, targets, jump lines and number snakes. Such markings can be used for playground games which develop children's fundamental movement skills during playtime, and can be used to support the curriculum in teaching children how to count and tell the time for example. Indeed, it has been stated that 50% of the National Curriculum can be taught in school playgrounds and surrounding grounds (Titman, 1992).

The Yellow Zone

The Yellow Zone is classed as the chill out zone, where children can engage in non-active games such as word games, clapping games, and board games such as chess and draughts (Stratton & Ridgers, 2003). This zone typically comprises of playground markings such as chessboards, and benches so that children can sit down and interact with others away from the vigorous playground games (Titman, 1992).

Examples of the zones can be accessed on the REACH Group's website in the LSPP research monograph¹. The use of zones and the different markings are important in the promotion of physical activity and health as they reduce the restrictions usually placed on children and increase the choices they have for outdoor activities. Additionally, they provide support for teaching different aspects of the National Curriculum, including PE and Maths, for example.

Liverpool Sporting Playgrounds Project (LSPP)

In order to investigate the impact of the playground redesigns on children's physical activity levels and play behaviour, and to assess the contribution of playtime to daily physical activity guidelines, the Liverpool Sporting Playgrounds Project (LSPP) was developed. For a more comprehensive overview about the LSPP, the reader is directed to Stratton and Ridgers (2003). The purpose of this article is to provide an overview of the initial findings from the LSPP to date. We discuss baseline measures of physical activity, gender issues and school approaches to developing health promoting playgrounds.

In Liverpool, the LSPP has been actively researching children's physical activity and play behaviours in the playground for two years. The project is being run by the REACH Group (Research into Exercise, Activity, and Children's Health) at Liverpool John Moores University in conjunction with Liverpool LEA, Liverpool Sport Action Zone and Sport England. Twenty primary schools have secured £20,000 to redesign their playground, based on the Zoneparc model, from the national initiative funded by the DfES and Nike (Stratton & Ridgers, 2003). At the end of the summer term, all 20 schools had received their "Sporting Playground".

Sixteen of these schools had chosen the Zoneparc playground. A further 10 schools are involved in the project as postcode matched controls, resulting in approximately one quarter of the primary schools in the city being monitored as part of the project.

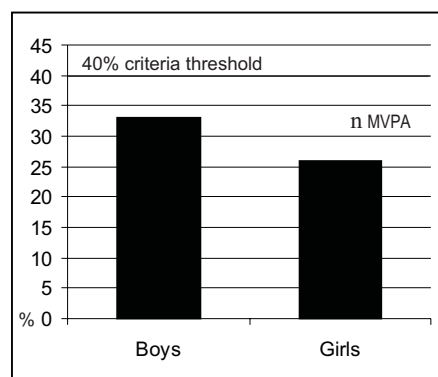
To date, 506 children aged 5-11 years of age have had their physical activity monitored and their playground behaviour observed. Over 50 detailed semi structured interviews have been conducted with children and school staff to examine their attitudes towards playtime and play behaviours, and to determine the types of activities children enjoy playing in the playground. Additionally, approximately 150 hours of playground interactions and behaviours have been observed and recorded during playtime. This enables a comprehensive analysis of children's physical activity and their social behaviour during playtime to be conducted.

Play in Schools - Initial Findings.

The baseline phase of the project, conducted from July 2003 to July 2004, has yielded a number of findings, which are highlighted below. These findings focus not only on the physical activity of the children, but also on their range of play, their attitudes towards play, and the differences observed between boys and girls.

- ♦ The average play length was 84 minutes in the schools tested. Therefore, during one school week, children spend 420 minutes or 7 hours engaged in playtime activities.
- ♦ Boys engaged in more moderate to vigorous physical activity (MVPA) during playtime than girls (see Figure 1)

Figure 1



- ♦ There were no significant differences between the infant and junior children's physical activity levels (MVPA)

Common games observed across playtime were:

- ✓ Football, though this was played by a greater number of boys than girls

- ✓ Chasing games such as tick and hide and seek
- ✓ Skipping
- ✓ Dancing, though this was more popular with girls than boys
- ✓ Talking with friends
- ✓ Other ball games such as basketball
- ✓ Fantasy and pretend play
- ♦ Incidents of rough play and play fighting were higher in playgrounds where play equipment was limited
- ♦ Children of all ages look forward to and enjoy playtimes.

A selection of quotes discussing the positive aspects of playtime are shown here:

- “ ... we don't have to do work (Year 3 boy)
- “ It's our time during the day (Year 3 girl)
- “ Because I want to play football (Year 6 boy)
- “ [I enjoy] playing with my mates and talking” (Year 5 boy)
- “ You can do whatever you want” (Year 4 girl)

A number of children stated that they did not enjoy playtime. Reasons for this included:

- “ There's nothing really for girls” (Year 4 girl)
- “ There's nothing to do” (Year 4 girl)
- “ It's a bit boring because you play the same stuff” (Year 5 boy)
- “ There's not many markings and you can't sit [down]” (Year 4 boy)

These results suggest that children of all ages look forward to their playtime and use this time to engage in activities of their own volition. The finding that boys are more physically active than girls during playtime supports work conducted by other researchers who have noted similar results in both the United States (Sarkin et al., 1997) and in Britain (Stratton, 2000). It is possible that these findings are linked to the range of activities that children participate in during playtime. The baseline study has indicated that the most common activity for boys to engage in is football, and it is not unusual to see multiple soccer games played parallel to each other on the playground. Observations revealed that girls tend to engage in more sedentary social activities such as talking with friends. This again is consistent with previous research (Evans, 1996). More active games such as skipping and dancing are also popular with the girls, with the social aspects of these games highly important to them.

Football tends to dominate...

One of the main concerns highlighted by girls and members of staff in the playground was that football tends to dominate the available play space and girls were often located around the perimeter of the playground. As one head stated "you need to have your football because if you don't have your football the kids will probably just be a pain". The

fact that boys are more active than girls could also be explained, in part, by this use of the play space for different activities. Therefore, the effect of zoning the playground into three areas, one for sports, one for skills, and one for non-active games is an interesting element of the project. The reader is directed towards Stratton & Ridgers (2003) for a detailed discussion of the Zoneparc initiative. The effect of playground redesign on children's physical activity represents the first key aim of the project over the ensuing twelve months.

Higher incidents of rough play...

An interesting finding in this phase of the project was that there were higher incidents of rough play and play fighting when equipment on the playground was limited. It was more common in boys' activities, and the underlying reasons have not been widely established. It may be linked to a lack of activities that the playgrounds currently offered to the children during playtime. With the Zoneparc model offering a choice of activities for children to engage in through the zones' markings and equipment, the impact that this has on the children's play behaviours during playtime represents the second major aim of the project.

Proposing a time and efficiency guideline

The baseline results indicate that the average playtime length across the school day was 84 minutes. Recent physical activity guidelines recommend that children should engage sixty minutes of MVPA, and at least a minimum of thirty minutes a day (Biddle et al., 1998). However, there are currently no physical activity recommendations for playtime. Based on the results of this study, if children engage in MVPA for 40% of the playtime available, they will achieve the minimal guideline of thirty minutes through playtime alone (33 ½ minutes exactly). This proposed guideline gives schools a physical activity target for their children to achieve during playtime.

It is suggested...

It is suggested that schools should look towards ways of developing their own playground area to promote physical activity during playtime. Strategies could include the provision of playground markings and equipment, training of children and staff to supervise and facilitate activities and games, and placing physical education specialists into the play areas to teach new games to children. These may also promote more positive attitudes towards playtime from children who currently do not look forward to playtimes because of a lack of available activities.

Conclusion

The aim of this article was to inform physical educators and health promoters about the Sporting Playground initiative being undertaken in Liverpool, and to highlight a number of the initial findings from the baseline work.

The project has suggested that playtime is an enjoyable aspect of the school day for children, and that they use this time to play and to develop social relations with peers. Playtime also offers an ideal opportunity to promote physical activity behaviours to children of all ages in a context that children feel is their own (Evans, 1996). Playtime has been described as the neglected part of the school day (Blatchford et al., 1990). The LSPP aims to address this issue, and to investigate how children's physical activity and play behaviours change as a result of the Zoneparc playground redesign being implemented in the schools.

The project will also continue to investigate the longer-term effects of the playground redesign on children's activity and behaviour, tracking the children monitored during the baseline phase of the project for twelve months. Further updates of the effects of the playground redesign on children's physical activity and behaviour will be documented over the next phases of the LSPP.

References

- Biddle, S. J. H., Sallis, J. F., & Cavill, N. (1998). *Young and Active: Physical Activity Guidelines for Young People in the UK*. London: Health Education Authority.
- Blatchford, P. (1989). *Playtime in the Primary School: Problems and Improvements*. Berkshire, UK: NFER-Nelson.
- Blatchford, P., Creeser, R., & Mooney, A. (1990). Playground games and playtime: The children's view. *Educational Research*, 32, 163-174.
- Department for Education and Skills. (2005). *Primary Playground Development*. DfES Publications.
- Evans, J. (1996). Children's attitudes to recess and changes taking place in Australian primary schools. *Research in Education*, 56, 49-61.
- Hardman, K. & Marshall, J. (2000). The state and status of physical education in schools in international context. *European Physical Education Review*, 6, 203-229.
- Pellegrini, A.D. (1995). *School Recess and Playground Behaviour: Educational and Developmental Roles*. New York: SUNY Press.
- Pellegrini, A.D. & Davis, P.D. (1993). Relations between children's playground and recess behaviour. *British Journal of Educational Psychology*, 63, 88-95.
- Sarkin, J. A., McKenzie, T. L., & Sallis, J. F. (1997). Gender differences in physical activity during fifth-grade physical education and recess periods. *Journal of Teaching in Physical Education*, 17, 99-106.
- Stratton, G. (2000). Promoting children's physical activity in primary school: An intervention study using playground markings. *Ergonomics*, 43, 1538-1546.
- Stratton, G., & Ridgers, N. D. (2003). Sporting Playgrounds Project - An overview. *British Journal of Teaching in Physical Education*, 24, 23-25.
- Titman, W. (1992). *Play, Playtime and Playgrounds*. Devon, UK: Southgate Publishers.
- Tizard, B. Blatchford, P., Burke, J., Farquhar, C. & Plewis, I. (1988). *Young Children at School in the Inner City*. London: Lawrence Erlbaum Associates.
- Van Beurden, E., Barnett, L.M., Zask, A. Dietrich, U.C., Brooks, L.O. & Beard, J. (2003). Can we skills and activate children through primary school physical education lessons? "Move it Groove it" - a collaborative health promotion intervention. *Preventive Medicine*, 36, 493-501.
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