

## ***Including children with cerebral palsy in mainstream physical education lessons: a case study of student and teacher experiences***

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### **Abstract**

The purpose of this study was to gauge perceptions of the benefits of, and barriers to, physical education (PE) for children with cerebral palsy (CP) in mainstream schools. Physical activity has been advocated as having important benefits for children with CP. With a move towards including children with disabilities within PE classes, it is important that possible benefits and barriers are investigated. In-depth interviews were conducted with three students with CP, two teachers, and three teaching assistants at a mainstream school in the south of England. Through inductive content analysis, the following key themes emerged: psychological benefits (i.e., enhanced self-esteem and body image, enjoyment and a sense of freedom), social benefits (i.e., being part of the group, developing relationships and social skills), and physical benefits (i.e., mobility). Themes also emerged regarding possible barriers. These included: environmental (i.e., appropriate equipment and facilities), organizational (i.e., appropriate staff, health and safety, and class sizes), the disability (i.e., physical aspects and the wheelchair) and attitudinal (i.e., of peers, staff and the child) barriers. Teacher training and the adaptation of activities were identified as areas which require attention. Communication between staff and students with CP is vital to ensure the individual's needs are being met.

**Keywords:** inclusion; disability; adolescent; physical activity; coaching.

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## **INTRODUCTION**

Research indicates that there are a range of potential benefits associated with PE for young people (Bailey, 2006). This, coupled with a move towards including children with a disability in mainstream schools, raises issues which merit investigation. The present study focuses on exploring the perceived benefits of, and barriers to, the participation in physical education (PE) within a mainstream school in the United Kingdom for children with cerebral palsy (CP). Through giving voice to pupils, teachers and support workers, this research aims to generate a more comprehensive understanding of their experiences.

The PE and School Sport Strategy for Young People (PESSYP) aims to provide all children access to five hours of PE per week by 2012 (Sport England, 2009). Legislation dictates that all pupils, including those with Special Educational Needs

(SEN), have a fundamental right to access PE (Vickerman, Hayes & Whetherly, 2003). To facilitate this, plans have been proposed to promote inclusion (Qualifications and Curriculum Authority, 2007). Indeed, including children with disabilities in mainstream PE has become more common in recent years (Nadeau & Tessier, 2006). Based on a review of the literature, Vogler, Koranda and Romance (2000) proposed that: "in physical education, inclusion has been effective in facilitating motor engagement, motor performance, and the self-concept of children" (p. 162). Further research has suggested that children with disabilities prefer to participate in the mainstream sport programme (Goodwin & Watkinson, 2000). Key questions remain, however, around entitlement, accessibility, integration and integrity (Vickerman et al., 2003). Further research is also required in relation to specific disabilities, such as CP.

Cerebral palsy is the most common motor disability in young people, "it comprises of a group of conditions, heterogeneous in causation and manifestations, grouped together mainly for purposes such as the planning of habilitation and support" (Himmelman et al., 2005, p. 287). Key risk factors for the development of the condition are "low birth weight, intrauterine infections and multiple gestation" (Odding, Rowbroeck, & Stam, 2006). Griffiths and Clegg (1988) defined cerebral palsy as: "a persistent but not unchanging disorder of posture and movement, caused by damage to the developing nervous system, before or during birth or in the early months of infancy" (p. 11). Stokes (2004) stated that the different classifications of CP are based on two things: the impairment and the distribution of this impairment.

The impairment can be spastic, dyskinetic, or ataxic. Spastic CP is caused by damage to the cortex, the child will be stiff in one or more limbs and may have involuntary movements. Dyskinetic or athetoid CP is caused by damage to the basal ganglia or cerebellum, the main symptom is low muscle tone resulting in one or more floppy limbs. Lastly, ataxic cerebral palsy is caused by damage to the cerebellum and results in shakiness and random movements (Stanton, 1992). The distribution can be hemiplegia, diplegia or quadriplegia. Hemiplegia means one side of the body is involved, diplegia means the lower half of the body is involved, and quadriplegia means that the whole body is affected.

Regardless of the classifications, all CP sufferers will have a degree of decreased mobility. Children with CP are significantly weaker than their able bodied counterparts (Murphy & Carbone, 2008). In addition, they often have deformities at the joints. Stanton (1992) stated scoliosis (distortion of the spine) is the most common deformity in children with CP, followed by hip deformities. PE represents a potential mechanism through which some of these challenges can be addressed.

### **Potential Benefits of PE**

Bailey (2006) identified a range of possible benefits which can be associated with PE. It "...helps children to develop respect for the body - their own and others', contributes toward the integrated development of mind and body and develops an understanding of the role of aerobic and anaerobic physical activity in health" (p. 397). Further, psychological benefits such as the development of self-esteem and self-confidence have been highlighted along with social benefits such as learning important social skills and having opportunities to communicate with others (Bailey,

2006). One must problematize the assumption, however, that PE, in and of itself, has automatic benefits for all participants. Although more empirical evidence is required to substantiate some of these associations, “there is a prevailing belief that engagement in physical education and school sport is, somehow, a good thing” (Bailey et al., 2008, p.15). It is important to explore whether these potential benefits are enjoyed by children with CP in the PE environment.

The need to understand the experiences of children with CP within PE is of particular importance when one considers the key role played by physical fitness in their lives. Rimmer (2001) noted that persons with CP must maintain higher levels of fitness than the normal population to offset the decline in function associated with the condition and with the natural aging process. It is generally accepted that physical activity is good for children with CP (Murphy & Carbourne, 2008). It has been suggested that “adequate levels of muscular strength and endurance are associated with increased bone mass, reduction in injury from falls, and a greater ability to complete activities of daily living” (Murphy & Carbone, 2008, p. 1058). Youths with CP have been identified as being at a significant risk of having a sedentary lifestyle (Longmuir & Bar-or, 2000). There is, therefore, a need to explore the perceptions of children with CP, as well as teachers and support staff, to highlight what they perceive to be the benefits and possible barriers to participation.

### **Barriers to Participation**

In relation to sport in general, persons with a disability have been identified as the most excluded group (Sport England, 2004). The most significant causes of lower participation in sport for persons with a disability have been identified as: “lack of motivation and confidence, negative school experiences, no support from family and friends, lack of information on opportunities, transport problems, lack of time and money, and poor physical access” (Thomas, 2008, p. 210). In PE, it is realistic to expect that children with CP will have to overcome physical barriers. Impairments such as weakness, muscle spasticity, and deficient balance make it difficult for children with CP to participate in sport. Hoofwijk et al. (1995) also demonstrated that children with CP had lower cardiovascular endurance, based on their  $VO_2$ max values, which “might reflect inefficient ventilation, compromised circulation, and local fatigue in the spastic limb muscles” (p. 305).

Research by Nadeau and Tessier (2006) also highlighted a number of social challenges faced by children with CP in schools. They reported several negative aspects of including children with CP in mainstream classes across the curriculum. They showed that “children with CP differed from their classmates with respect to social status, number of reciprocated friendships, sociability/ leadership, social isolation behaviour, and verbal and physical victimization” (p. 334). Such studies highlight the need to explore people’s experiences of the barriers to inclusion.

### **Listening to Children’s Voices**

A need to explore the experiences of children when considering situations which affect them has been emphasized (Coates & Vickerman, 2008; Ravet, 2007). In pioneering qualitative research, Medcalf (2010) conducted in-depth case studies with 6 children classified as having social, emotional or behavioural problems. This research highlighted the idiosyncratic nature of these children’s experiences and how multiple truths are evident. The sense of freedom and opportunities for

socialization with peers were identified as key narratives related to the PE experience.

Further qualitative research has been conducted by Spencer-Cavaliere and Watkinson (2010). Semi-structured interviews were undertaken with 11 children aged between 8-12 years old. The children had disabilities which included CP, fine and gross motor delays and muscular dystrophy. Content analysis highlighted the importance of gaining entry to play, feeling like a legitimate participant and having friends. The actions of other people were identified as a key determinant of the degree to which effective inclusion was achieved. It is important to build on this research to take a more holistic approach through also including the perspectives of the teachers and support workers.

## **AIMS**

The present study explores the perceptions of adolescents with CP, their teachers, and support staff regarding inclusion in PE in a mainstream school. Two specific research questions were identified. Firstly, what are the perceived benefits of PE for pupils with CP? Secondly, what are the potential barriers to including pupils with CP in PE?

The need for this research can be justified on a number of grounds. Firstly, there is a lack of research which specifically addressed this topic within this population. Secondly, related research has tended to focus on children with mild disabilities, as highlighted by Vogler et al., (2000). The present study considers children with moderate or severe CP. Thirdly, existing research tended to focus on the perceptions of teachers and thus, neglected the views of the child (Graham, 1995). Although some research included children, the experiences of adolescents received little attention (Rimmer, 2001). Finally, related research has been criticized for focusing on the disability itself rather than the broader context (Hemmingson & Borrel, 2002). The present study, therefore, adheres to the recommendation of the World Health Organization (1999) through adopting a more holistic approach to also consider contextual factors. Through such research it may be possible to advocate changes which promote the benefits and help overcome the barriers faced by adolescents with CP.

## **METHOD**

### **Participants**

The eight participants were three pupils with CP (Jo, Sam, and Ali), two teachers and three support workers. Jo is 22 and has spastic quadriplegia and uses an electric wheelchair. She finds it difficult to grip objects and to perform delicate tasks such as painting. Jo has poor balance as well as limited trunk control and leg movement. Sam is 20 and has spastic diplegia. Sam has perfect movement in the arms, but has difficulty moving his legs. He can move around using walking sticks. Ali is 18 and has athetoid dystonic, which affects all limbs but particularly those on the right side. He has very limited weight bearing on the right side. Ali uses an electric wheelchair. The support workers helped these students in physical education, usually on a one-on-one basis. The students' activity levels varied from only participating in sport in PE lessons to elite level participation (in sailing). All of the students had diagnosed

physical disabilities, but did not have learning disabilities. All three students had the congenital form of cerebral palsy, meaning they were born with it as opposed to acquiring it in early childhood.

### **Instruments**

An interview schedule was adapted from those used in previous related research (e.g., Herold & Dandolo, 2009). A semi-structured interview was used for all of the participants. However, the questions were re-worded depending on the interviewee (e.g., pupil with CP, support worker, or teacher). The interview covered five areas: demographics (e.g., how old are you?), experience of PE (e.g., can you tell me about your experience of PE?), perceived benefits of participation (e.g., what do you feel are the benefits of PE for people with cerebral palsy?), perceived barriers to participation (e.g., can you tell me about things which make participation in PE difficult?) and any recommendations that they would make to enhance the experience (e.g., what changes would you make to PE to facilitate inclusion of people with cerebral palsy?).

### **Procedures**

An interpretivist perspective was adopted for this research. This approach assumes that knowledge and truth are co-constructed and negotiated through dialogue. The need to give voice to key stakeholders such as pupils, teachers and support workers is adhered to through acknowledging that it is via their interactions that reality is developed and maintained.

Approval for the research was obtained from the university's research ethics committee prior to data collection. The participants were fully informed about the research, verbally and in writing. All participants gave voluntary written consent to take part in the investigation and had the right to withdraw at any time. Participants were recruited from one secondary school in the south of England using opportunity sampling. Students with CP who had left the school within the previous six years, were contacted and informed about the nature and purpose of the research. Interviews were then arranged with the students who volunteered for the study. Their teachers and support workers, who all still worked at the school, were then approached and invited to interview.

All of the interviews with the teachers and support workers were conducted on the school premises, in a meeting room. This room was quiet and exclusively used for the interview, thus, only the researcher and the interviewee were present. For the participants with CP, one interview was also conducted in the school's meeting room. A second interview was conducted over the phone due to the participant being away at university. The third and final participant with CP had speech difficulties and found the problem to be most troublesome during phone calls. He could not commit to a face-to-face interview due to an intense training regime, so, the interview was conducted over a secure private internet chat room. All interviews were transcribed verbatim. The transcripts were then e-mailed to the participants. They were invited to confirm the accuracy of the transcript and to make any further comments (cf. Lincoln & Guba, 1985).

## Data Analysis

Content analysis is a process by which large amounts of qualitative data are organized through coding the information into categories that concern similar themes. It was deemed to be the most appropriate approach in the present research because it would allow the identification of salient themes across participants' responses. Salience was judged based on the frequency and intensity of comments and was highlighted through discussions between the authors.

The analytical process commenced by reading all pages of the transcribed data to increase our understanding of the information that was obtained from the participants. Data from all participants (i.e., students, teachers and support workers) were content analysed together. Both authors analysed the data on the basis that a raw data unit represented a "quote" (i.e., a complete sentence/s that referred to a distinct benefit or barrier and made sense as a stand-alone unit). Meaning units were reviewed to highlight those which related to a possible benefit or barrier. The meaning units were then inductively analysed within these categories to identify salient themes. The authors then independently reviewed the initial categorizations to confirm that all of the quotes were correctly classified. Meaning units which focused on a related topic were then grouped to form lower order themes which in turn were grouped to create higher order themes.

As a further check, once the authors were satisfied with all the classifications, the categories and subcategories were given to an independent psychology researcher who was asked to assign each subcategory (lower order theme, specific) to the most appropriate category (higher order theme, general). Then, the same researcher categorized the quotes into the most appropriate lower order theme. The responses supplied were 90% in agreement with the authors' categorizations, demonstrating some evidence of inter-rater reliability. Finally, the participants were provided with the themes and invited to make further comments (cf. Lincoln & Guba, 1985). This helped to confirm that the salient themes had been identified.

## RESULTS

All participants were able to identify benefits of PE and school sport for students with CP. Three higher order themes emerged from the data: psychological (i.e., enhanced self-esteem and body image, enjoyment and a sense of freedom), social (i.e., being part of the group, developing relationships and social skills) and physical (i.e., mobility). Barriers to inclusion were also identified. Four key themes emerged: environmental (i.e., appropriate equipment and facilities), organizational (i.e., appropriate staff, health and safety, and class sizes), the disability (i.e., physical aspects and the wheelchair), and attitudes (i.e., of peers, staff and the child). The participants also suggested improvements for the provision of PE for students with a disability. These improvements were related to teacher training or the adaption of activities. The following section considers the major themes that emerged from the data collection, including illustrative quotes from the participants. The participants have been assigned different names to protect their anonymity.

### Psychological Benefits

The participants felt that inclusion could potentially enhance the self-esteem, body image and enjoyment of children with CP as well as giving them a sense of freedom.

In relation to self-esteem Jo said, "I could do things I didn't think I could. I felt good because I felt like I achieved something." Sam added, "I felt good about doing that because it was something everyone else could do", in reference to running. The students in question seemed to feel good about themselves through participating in sport. They achieved targets, set by themselves or others, and as a result their self-esteem increased. Sam also recognized his involvement in running had made him feel fitter and thinner and, as a result, felt better about his body. This suggests his body image was improved through inclusion in PE.

A further psychological benefit explicitly mentioned was enjoyment. All the students mentioned this factor. Sam described the "euphoric feeling" he experienced as a result of exercise. The SEN staff also highlighted "having fun" as a benefit of PE for these students. Another teacher summarized this psychological process: "If they succeed they enjoy and if they enjoy they succeed as well". Thus, it seems a positive spiral emerges from the students' success in PE.

The children also reported that PE gave them a sense of freedom through enabling them to be out of their wheelchair. For example, Ali said sport made him feel "free from the wheelchair". He identified this as a very strong point suggesting that being in a wheelchair was something negative to him. Thus, it seems that the children, teachers, and support workers were aware of the psychological benefits of students' inclusion in PE.

### **Social Benefits**

The participants highlighted three social benefits of inclusion: being part of the team, developing relationships, and social skills. All three parties identified the importance of the children feeling part of the group. For instance, Jo said:

*"I felt like I was part of a team. I felt like the people I was playing with were able to tolerate me more and understand me, because I wasn't just the kid at the back of the class, I was actually in the group and part of it. Although I had someone helping me I felt like I was part of the team."*

A further social benefit was the development of peer relationships. Both SEN staff and teachers recalled students who "were difficult and challenging characters" in the classroom were very willing to work with students with disabilities in PE. PE seemed to give the children with disabilities a chance to bond with their peers. For example, Sam said he spoke to peers in PE that were outside of his friendship group, which he enjoyed.

Inclusion in PE was also said to enhance the social skills of the children. Ali explained how his inclusion had enabled him to develop his leadership skills through PE lessons and specifically the Junior Football Leaders course, which was available to the whole year. Since leaving school, he is now mainly involved in refereeing and coaching. Thus, PE has given him an alternative channel into sport aside from participation. This is an important factor for children with a disability as their participation in curricular sports is usually limited. However, in fulfilling other roles, such as officiating, they are still a valuable part of the team. As such, the children felt that inclusion did not necessarily mean performing the same tasks, but being included in some meaningful way.

### Physical Benefits

The main physical benefit of inclusion was enhancing mobility. Ali suggested that the key benefit of PE for him was an improvement in his mobility. To him mobility was “transferring his weight and the ability to move around independently”. He said his mobility largely depended on physical strength, the stronger he got the more mobile he became. Therefore, he saw regular exercise as fundamental in maintaining good mobility. Jo also found exercise helped with her mobility and joints and said that the doctors had always encouraged her to be active. Sam also said that PE helped him to develop his physical skills.

The support workers felt that increased flexibility was an important benefit of PE. This was attributed to the use of stretching exercises. Interestingly, the teachers did not highlight the physical benefits of participation. The category of benefits was found to be discussed more by the children with CP and their support workers.

### Environmental Barriers

The most prevalent environmental factors causing barriers to participation concerned appropriate equipment and facilities. Having access to appropriate equipment to enable inclusion was identified as a key issue. One support worker stated, “The equipment is a huge thing because it is built up for the able-bodied student so if you've got a wheelchair user, things like a hockey stick become a barrier, a basketball net is a barrier if it's too high.” A teacher elaborated on this point using Ali as an example. As previously mentioned he only had the use of one arm and is wheelchair bound. The teacher described an occasion when the class was playing hockey. Ali needed one arm to control his wheelchair, thus, holding a hockey stick was out of the question. One support worker adapted a hockey stick to be held between the knees and hold the ball in a v shape, allowing Ali to dribble and pass the ball whilst manoeuvring his chair. This facilitated Ali's inclusion in the game.

A further example which highlights the need for appropriate equipment was given by Jo. She recalled a lesson when she required assistance from two support workers to throw a discus because it was “too heavy”. She talked about this experience in a positive light, seeing the fact she eventually managed to throw it as a big achievement. However, this seems like an unnecessary barrier when a lighter discus would cost very little.

Participants also highlighted the importance of the equipment being suitable for the age of the student. This school researched and purchased specialist equipment to be used by children with a disability in PE. This equipment was ordered using vouchers from a scheme to get children active and included items of different weights and sizes to standard equipment. One support worker said:

*“They don't want to be seen to be different, but on the other hand if it means that you can actually participate in sport because you've got this lighter equipment then that's a good thing. However, a lot of the equipment that came, like the plastic bats, are the sort of thing you would use when you're six or seven, when you're teaching kids to hit with bats and balls. So from that point of view it's not ideal because you don't want to be seen using anything that's for a child.”*

Another teaching assistant highlighted the importance of adapted equipment being specific. She had to adapt a basketball drill, as the goal was too high for the student to succeed shooting from their wheelchair. The only alternative she found was a bin which she realized took the challenge away, as the student was constantly able to score. Thus, the principles of the game were lost.

Facilities were identified as a key element of promoting inclusion within PE. All participants agreed the facilities at the school were fully accessible. The sports centre had been rebuilt with a lottery grant, which required the new facility to be accessible. However, Sam had negative memories of changing before and after PE lessons. He said, "I had to change in the PE kitchen, because I needed help changing for speed. They wouldn't allow a female teaching assistant in the changing rooms and they didn't have male teaching assistants." So whilst there was a disabled toilet and an accessible changing room this student couldn't use it. He went on to say "he felt a bit excluded" not being able to change with the rest of his peers.

### **Organizational Barriers**

The need to have appropriate support staff, health and safety, and class sizes were viewed as potential organizational barriers. All of the children agreed that the support workers enabled them to participate to a greater extent. Whilst this is obviously not a barrier, the absence of a support worker therefore would be. Even though all students at the school in question have assistants this may not be the case in all schools. The children reported that the importance of having appropriate support staff goes beyond the support workers. For example, Ali was unhappy about the decrease in the input of physiotherapists between primary and secondary school. He believed this resulted in a loss of strength and mobility, which led to him being unable to keep up with his peers "in terms of physical development".

A further organizational barrier was the issue of health and safety. One support worker believed "Ali always wanted to do more than she thought was safe and that was a bit of a contentious issue". Two members of the SEN department expressed concern about the health and safety issues when lifting and handling Ali in PE.

Staff also noted that the size of the school was a limiting factor. Classes are between 26 and 32 students, and there is rarely more than one student with a disability in a year group. One teacher suggested the time she had with students with a disability was not always enough to make a difference. "With such large classes it limits the amount of time a teacher can spend with individual students." Whilst this applies to all students, not just those with CP, she still saw it as a barrier.

### **The Disability**

The participants revealed that the physical aspects of the disability and the wheelchair represented barriers. The students described how the physical aspects of their disability presented a barrier to their participation. Sam believed having CP meant his coordination, speed, balance and physical strength were poor. Jo identified the "physical side of PE" to be her barrier, as she couldn't "run, chase a ball or kick goals". One teacher suggested similar physical barriers as those identified by the children. He believed these physical barriers would cause the students frustration, "frustration of knowing what they want to achieve, but knowing probably they can't in certain instances and certain activities".

The support workers thought being in a wheelchair was a barrier. One support worker drew attention to temperature control for a wheelchair user. She said, "When it's cold or raining most students just go out and play sport, the weather doesn't matter. When you're in a wheelchair you can't just warm yourself up though." On the topic of rain several members of staff indicated mud on the field was a barrier for wheelchair users. The second assistant was concerned over the health and safety of other students. The wheelchair user has to be aware of other students and she felt they were excluded from certain things using the example of a rugby tackle. Whilst ramming into someone with a wheelchair would be an effective way of tackling them it's clearly not safe.

### **Attitudes**

Further potential barriers concerned the attitudes of peers, staff, and the child. Firstly, a barrier could be the attitude of the able-bodied peers. Jo found some students were not sure how to react around her, she said some peers "weren't so keen in getting me involved, but the ones who knew me were OK with me being involved because they understood my limits". Jo also said she preferred to do her physiotherapy exercises alone so she didn't feel like she was being watched and judged. One teaching assistant acknowledged the attitude of peers as a potential barrier, but didn't think it had been an issue at this school.

The attitudes of the staff were also highlighted as playing an important role. The teachers and support workers all believed they had made an effort to encourage students with disabilities and create an inclusive teaching environment. Both Jo and Sam supported this view. However, Ali said he felt "patronized by some PE staff regularly". He gave the example of them asking his carer if he was capable of doing something.

The attitude of the child also had the potential to represent a barrier, or a means by which barriers can be overcome. On the one hand, the staff members described how it could be difficult to work with children with CP if they did not wish to participate. One teacher recalled aiding a girl with severe CP to hold a tennis racket and to hit a ball. Whilst the girl could not have participated without this help she was reluctant to it and "reluctant to try". On the other hand, the students within this sample all appeared to have a positive attitude and to be motivated to work towards overcoming any barriers. This is supported by the fact that they have gone on to be physically active after leaving school and, in one case, to participate at the international level.

### **Suggested Improvements**

The participants were also invited to highlight ways in which children with CP could be more effectively included in PE classes in the future. The most common area of improvement participants suggested was teacher training. One support worker stated, "A lot of PE teachers don't have a true insight into the needs of students with a disability." This view was supported by Ali, who felt some staff patronized him because they didn't understand what his condition was. A second support worker agreed more training was needed, for PE teachers, in this area. She knew a newly qualified teacher who had no experience at all with children who have a disability. The SEN staff agreed a module on disability should be included in teacher training or in on-going professional development courses. The PE teachers agreed with these

opinions. One teacher said, "Starting with Sam it's been a learning curve for all the people in the department, but I think we did as well as we could with the limited training we had."

The second suggestion was to adapt activities to make them more appropriate. Participants felt more games should be adapted to facilitate the inclusion of students with a disability. Students, teachers and support workers agreed this was key in providing a positive PE experience for children with a disability. One support worker found a corridor, on the edge of the playing area, which allowed a wheelchair user space to manoeuvre. Participants agreed some activities were harder to adapt. If the activity could not be adapted, participants agreed the student should be given a different task or role. One support worker did raise the issue of the ratio between able-bodied students and students with disabilities. The majority of the time there's only one child in the class of 30, so adapting it for everyone may not be realistic. Jo felt it was important to keep fundamental elements of the game, but adapt it to allow inclusion. She emphasized the need for activities to be adapted on an individual basis:

*"It's very individual, you can't just have a blanket...Students must take part in sport, students must do this, and staff must do this, and change this about the sport to make it accessible. It really depends what student you've got, what they want to do, what they can do and what you can do to make it accessible to them. Even if it's just as simple as having the student sit there and watch, some students get something great out of just watching."*

## DISCUSSION

The purpose of this study was to gauge perceptions of children with CP, their teachers and support workers regarding the benefits of, and barriers to, participation in PE. Psychological (i.e., enhanced self-esteem and body image, enjoyment and a sense of freedom), social (i.e., being part of the group, developing relationships and social skills), and physical (i.e., mobility) benefits of participation were identified. However, environmental (i.e., appropriate equipment and facilities), organizational (i.e., appropriate staff, health and safety, and class sizes), the disability (i.e., physical aspects and the wheelchair), and attitudinal (i.e., of peers, staff and the child) barriers were also highlighted. Teacher training and the adaptation of activities were cited as key issues for promoting effective inclusion.

It has become widely acknowledged that physical activity can have significant psychological, social, and physical benefits (Bailey, 2006). People can experience a sense of achievement when overcoming a challenge (Whaley & Schider, 2005). Thus, if the activities used within physical education classes can be adapted to suit the needs of a child with CP then they can also experience the psychological benefit of sport. The participants also highlighted the social benefits of participation. The experience of belonging and the opportunity to develop interpersonal relationships may be particularly important in the light of research which indicates that children with CP can have lower social status and be at a greater risk of victimization (Nadeau & Tessier, 2006).

Improved mobility was the only physical benefit cited by the participants. This may be of particular importance as inactivity can lead to deconditioning in people with CP which in turn contributes to reduced mobility. As children with CP are significantly weaker than their able-bodied counterparts (Murphy & Carbone, 2008), there may be merit in emphasizing the possible physical benefits of activity.

Fundamental environmental barriers regarding the appropriateness of the equipment and accessibility of the facilities were also considered. Clearly, a child with CP should be contextually included in all aspects of physical education and not just in the specific activities being conducted. Providing age-inappropriate equipment may serve to promote exclusion from the social group and facilitate stigmatization. In relation to organizational barriers, there are certain constraints such as health and safety regulations, and class sizes which key stakeholders have to work within. However, there are some organizational, school-level, factors which can represent barriers. Within the present sample, all children with CP had worked with a support worker which enabled their inclusion. Even the most highly effective teacher can find inclusion difficult without the help of a support worker (LaMaster et al., 1998). The present research supports the findings of Spencer-Cavaliere (2010) who found that the actions of others had a significant impact on the effectiveness of inclusion. Through training and educating teachers and support staff, a school can create an inclusive organization which allows the child to participate.

The barriers represented by the disability itself, such as poor balance and strength, support those identified in previous research (Damiano et al., 2002). It is important, however, for people with CP to maintain a good level of physical fitness to help reduce the onset of these potential physical barriers (Rimmer, 2001). The attitudes of everyone involved appeared to play a fundamental role. Interestingly, the attitudes of peers, support workers, teachers and, in particular, the child, could all represent significant barriers or ways in which barriers could be overcome.

### **Summary of Applied Implications**

Based on the present study, some tentative recommendations can be made. All stakeholders can be educated around the range of potential psychological, social and physical benefits of participation. This can include pupils with CP, their peers, parents, teachers and support workers. This could be incorporated into existing training programmes or delivered via workshops or online resources. Knowledge of these benefits can help to facilitate a positive approach to addressing the potential barriers. The participants highlighted that some barriers are difficult to overcome but can be worked around. Other barriers, such as those related to attitudes and facilities, can be addressed.

The findings of this study suggest inclusion does not always require participation in the same activities alongside peers. The students felt included when they were officiating, completing adapted activities or even spectating. They accepted they were different and had physical limitations. Thus, inclusion does not mean making a child participate in the physical activity at all costs. It means communicating with the child and encouraging them to participate in some capacity as often as possible.

## Limitations

There are some limitations associated with the present research which should be acknowledged. Firstly, the method relied on retrospective accounts of PE classes. Although this ensured that the participants could reflect on their whole school experiences, their recollections will be subject to memory bias. Secondly, the data relates to the participants' perceptions of the benefits and barriers to inclusion. One cannot conclude that the benefits were enjoyed or that all of the key barriers were identified, only that these were the subjective experiences of the participants. It may be that other benefits and barriers are relevant but were not cited and that some of the cited factors did not actually have a significant role to play. Finally, these participants were drawing on their experiences of one school in the south of England. One cannot, therefore, confidently generalize these findings to all children with CP, rather they should be treated as an initial investigation designed to highlight potentially important issues which merit exploration in future work.

## Future Research Directions

Some of these limitations could be overcome in future research. For instance, the present research could be replicated with children with CP who are currently attending PE classes. It is also likely that parents play an important role and hence they could be included in the sample. A more representative sample of schools could also be included. Furthermore, using alternative methods may enable different perspectives to be gained on this issue (e.g., questionnaires, focus groups or ethnography). There is also scope to develop, implement and evaluate interventions which are designed to promote the effective inclusion of children with CP in PE classes. The present research also focused on the PE context. It would be interesting to investigate the same issues but within the sporting context. Finally, longitudinal research may help to elucidate the temporal factors and highlight how these issues interact and change throughout the school experience.

## CONCLUSION

As the inclusion of children with disabilities in mainstream PE classes becomes more prevalent (Vogler et al., 2000, Nadeau & Tessier, 2006), it is critical that the experiences of those involved is explored. The present research adheres to the recommendation to listen to the voices of young people (Coates & Vickerman, 2008; Medcalf, 2010; Ravet, 2007). As research indicates that children with disabilities preferred to participate in mainstream classes (Goodwin & Watkinson, 2000), there is a need to work towards optimizing the potential benefits and overcoming the potential barriers to inclusion. As physical activity is generally accepted to be good for children with CP (Griffiths & Clegg, 1988, Murphy & Carbourne, 2008), there is a moral obligation to ensure that schools are an environment in which physical activity is promoted and facilitated. Beyond this, there is a legal and political obligation to promote inclusion (Qualifications and Curriculum Authority, 2007; Vickerman et al., 2003). The findings of this study can help to facilitate this as through understanding people's perceptions of benefits and barriers, one is better equipped to ensure that they are optimized and overcome.

## FIRST AUTHOR'S BIOGRAPHY

Eleanor completed her degree in Sports Science at Brunel University in 2010 and this paper came from her dissertation research, with the data collected between October 2009 and March 2010.

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