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Nursery staff and parents perceptions of preschool children's physical activity in relation to environment, facilities, play and barriers to PA: A qualitative study

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Abstract

PA levels of children attending different preschools have been reported as varying greatly, with the characteristics of the preschool influencing a child's PA level (Pate et al., 2004). Parents and teachers have been known to overestimate the PA levels that children complete and this may place a decreased importance on encouraging and supporting PA in preschool children (Tucker, 2008). Settings with greater space and opportunities for outdoor play and PA are required, as a lack of space is a major cause of being overweight for 10-40% of children in developed countries (Blair et al., 1994). Mastery of Fundamental Movement Skills (FMS) is a prerequisite to functioning on a daily basis (Venetsanou and Kambas, 2011); they provide the building blocks for future motor skills and PA. Failure to achieve mastery in these skills could prevent preschool children from participating in PA. Therefore, the aim of this study was to investigate nursery staff and parents' perceptions of preschool children's PA, in relation to the environment, facilities, play and barriers to PA. With institutional ethics approval, focus groups were conducted in 4 preschools, with the inclusion of parents and staff of 3-5 year old children (n = 17, parents = 10, staff = 7) from North Warwickshire, England. Thematic analysis (Braun and Clarke, 2006) was used to identify key themes and subthemes from the transcripts. Emergent themes included: outside exercise, outdoor equipment, the responsibility of PA, lack of exercise, modern lifestyles, time, cost, health and safety concerns of staff and staff training. Differences were apparent between preschools when discussing measurement of PA and FMS, PA at home, space in the settings and staff training. The findings suggest that preschools provide good opportunities for PA and FMS, especially for pre-schoolers from low socio-economic backgrounds. However, results also highlighted a need for more extensive training of staff in relation to PA and FMS opportunities. To increase PA and FMS in pre-schoolers, interventions are required which continue with the current levels of PA in preschools, combined with parental involvement to deliver PA; through encouraging indoor and outdoor activities and participating in less sedentary activities in the home environment. Interventions also need to provide staff training to support settings to deliver PA and FMS to preschool children.

Keywords
Physical activity, Motor Development

Introduction

Preschool children should engage in at least 3 hours of moderate to vigorous PA (MVPA) per day, through challenging activities which are indoors or outdoors, to facilitate motor development and the ability to perform large muscle activities (Davies et al., 2011; NAPSE, 2009; Reilly et al., 2012). Of children aged between 2-4 years in England, only 9% of boys and 10% of girls meet the recommended 3 hours of MVPA per day (Health and Social Care Information Centre, 2012). PA in this age group is low and has the capacity to improve (HM Government, 2014). Understanding barriers to PA in preschool children, is essential, in terms of their current and future health.

There is a positive link between sedentary behaviours and overweight in preschoolers. Almost 1 in 5 children (18.7%), started school overweight/obese (Hardy et al., 2012). Preschool children with parents who have a high BMI, or who are from a low socioeconomic status, are also at a greater risk of being overweight/obese (van Stralen, et al., 2012). This has raised the requirement for studies to assess which PA behaviours are associated with being overweight in this age group. The preschool years are extremely crucial in terms of weight, as the children start to establish PA patterns and eating habits. If excessive weight gain is prevented in preschool children, then a healthier weight should be maintained when older (Gardner et al., 2009).

PA levels of children attending different preschools has been reported as varying greatly, with the characteristics of the preschool influencing a child's PA level, rather than the child's personal demographic characteristics (Pate et al., 2004). Multiple factors determine PA behaviours and these include physiological, psychological, social, environmental and demographics (Giles-Corti et al., 2011). Settings with greater space and more attractive opportunities for outdoor play and therefore PA are required, as a lack of space is a major cause of being overweight for 10-40% of children in developed countries (Blair et al., 1994). Access to spacious environments with trees, shrubbery and open ground should be part of a preschool's layout as this could be influential in promoting PA in the form of independent mobility (Boldemann et al., 2006).

Mastery of Fundamental Movement (or Motor) skills (FMS) is a prerequisite to functioning on a daily basis and participating in later physical or sport-specific activities (Butcher and Eaton, 1989; Venetsanou and Kambas, 2011), as they provide the building blocks for future motor skills and PA (NASPE, 2009); therefore they are imperative for preschool children. Improved performance of FMS amongst children has been reported as positively correlated with participation in organised sport (Raudsepp and Paasuke, 1995). Motor skills competency and PA will strengthen together over time and therefore possess a reciprocal relationship, which will prevent physical inactivity (Stodden et al., 2008). Children with better developed motor skills spent significantly more time in MVPA and VPA and significantly less time in sedentary behaviours, when compared to children with less developed motor skills (Williams et al., 2008; Wrotniak et al., 2006). National data on adolescent physical inactivity mirrors the data on early childhood FMS delays (Stodden et al., 2008); supporting the assumption that different levels of motor skill development in children may be an influencing factor in being physically active. Preschool children

behave differently and the relationship between behaviour and motor proficiency is a concern as children choose different activities and intensity levels as part of their 'play'; with more active children participating in more gross movement skill activities (Butcher and Eaton, 1989). Such development patterns develop in early childhood; therefore, understanding how they are integrated into preschool children's daily routine is imperative.

Physical activity and motor development are important, as they both develop in the preschool years. However, there is a general lack of studies with pre-schoolers on this topic. By far the majority of the studies that have examined this issue, have taken a quantitative approach by trying to directly measure pre-schoolers PA patterns (REF REF REF). While such an approach is useful, it is of key importance to understand the real experiences of pre-schoolers, parents and nursery staff in relation to their foundations for a physically literate life. Given the influence of parents and nursery staff in shaping the habits/development of preschool age children, is an understanding of their perceptions of PA in relation to the children. No study to date has provided such information which is essential to effective intervention design. The aim of this study is to investigate nursery staff and parents' perceptions of preschool children's PA, from a qualitative perspective, considering the environment, facilities, play, socio-economic status and barriers to PA.

Method

Participants

Following institutional ethics approval and informed consent, parents and staff of 3-5 year old preschool children who were attending four different preschools in North Warwickshire, England participated in this study (n = 17, parents = 10 staff = 7). North Warwickshire was chosen as it incorporates preschools that are considered to have the highest levels of deprivation in the County. This is supported by the highest Super Output Area (SOA) score, ranked as the 76th most deprived Local Authority District out of 326 in England (Warwickshire Government, 2010). Within Warwickshire there are nine SOAs that are in the top 10% of the most deprived in England on the Index of Multiple Deprivation (IMD) 2010 (Warwickshire Government, 2010), these are all within the Nuneaton and Bedworth Borough, which formed part of the preschools used for this study.

Procedures

Focus group interviews were used to gain an in-depth understanding of preschool children's PA levels both in the preschools and at home. Each focus group consisted of four or five participants, as per the recommendations of King and Horrocks, (2010). Focus groups were chosen as they provide a more naturalistic data collection method in comparison to questionnaires and interviews (Eyre, et al. 2013). They are advantageous as they allow participants the opportunity to contribute answers based on other people's responses; this can promote free flow of a

discussion and be excellent in that they allow the language and responses of participants to be heard (Wilkinson, 2004).

In the present study six main topic areas were used to question the participants, they were: knowledge, beliefs and sources of PA, knowledge and beliefs about obesity, knowledge of the environment and facilities for PA, barriers and facilitators to PA, knowledge and beliefs of FMS linked with PA and staff training on PA. These topics were important because they covered a variety of areas, which allowed the participants to freely discuss PA levels of the preschool children. The questions were open ended to allow for greater depth in the participants responses.

The interviews were conducted in the preschool settings during preschool hours, as familiar settings provide comfort and are beneficial for focus group data collection methods (King and Horrocks, 2010). The interviews lasted between 40-65 minutes per group, this was sufficient time for conversations to occur and also for the staff and parents to be engaged and not lose concentration.

Analysis of qualitative data

The focus groups were digitally recorded (Olympus DS-2400, digital voice recorder, China) anonymised and transcribed. A facilitator verified the transcripts. The data from the focus group interviews were analysed using thematic analysis, where patterns within the sample were found; it followed guidelines proposed by Braun and Clarke (2006). Thematic analysis is a widely used mechanism which is used to identify, analyse and report patterns within qualitative data; it is considered to reflect reality and determine themes (Braun and Clarke, 2006), it allows key themes and subthemes to be identified from the transcripts.

Results

Results are presented in relation to each of the six main topic areas involved in each focus group. The quotes are referenced as the focus group/setting number and the preschool staff or parent number. A summary of the findings can be found in Table 1. Using the thematic analysis the main themes identified were obesity being synonymous with a lack of PA, the outdoor environment being imperative for PA to occur, time and cost as barriers to PA, parental involvement required more to promote PA for preschool children and staff requiring more PA training.

Knowledge, beliefs and sources of PA

What is PA?
Regardless of the setting all parents and staff had a good knowledge of PA. The emerging themes all related to movement where running, jumping, using the trikes and the outdoor space were all mentioned. Participants reported that '*PA is anything that increases heart rate, for example running'* (S1, S1). This was supported by a further comment of '*when I think of PA I think of an increased heart* rate' (S2, S1).

What are the benefits of PA?
There were numerous benefits of PA that were mentioned and these can be categorised under physiological, psychological and sociable (Table 2). The

physiological benefits of PA that were mentioned involved 'burning fat and energy' and it makes them [the children] 'physically better'. Psychological benefits ranged from the preschool children having a 'better concentration', 'being happier', 'more attentive' and generally 'more focused'. Finally, social benefits were mentioned, PA was described as important, as it allows preschool children the opportunity to '*meet other children…and be socially better*' (S2, P1).

Physical Activity and Play

'Play' was described as '*being physical*' (S1, S2), participating in '*anything that the children enjoy and is fun, like jumping and role play'* (S2, P3), it '*could involve anything from doing a jigsaw to being imaginative super heroes*' (S1, S1). '*Imaginative play and playing with characters is what our children like doing*' (S3, P1), and play was summarised as '*learning through activities*' (S4, S2). '*Our children do a drama group, this also promotes play as they tend to be giants and very physical, this is where play and PA interlink*' (S1, S1). It was added that '*children don't view PA and play as different, which is positive, as children just exercise and enjoy it, whereas adults sometimes see it as a chore'* (S2, P3). '*When outside the children are actively moving around and pretending to be different characters*' (S3, S2), '*they never sit down, a game always evolves someway, whether it is playing aeroplanes or running around'* (S4, S1). '*Even through role-plays they are active and enjoy making tea and walking around*' (S4, S2); this is how PA and play interlink.

When questioned about how often do the parents and staff feel that the preschool children play per day this was answered by the majority of the participants as '*the majority of the day'* (S1, P1), '*they never stop*' (S2, P2). With most participants acknowledging that '*play occurs most of the time, apart from food and stories'* (S1, P2), and '*small focus group time and registration*' (S3, S2), so potentially '*75% of the time'* (S1, S1).

What/who are the key sources of PA in the children?

Participants from three of the settings agreed that both parents and preschool staff are the key sources of PA. One participant stated, '*it depends on how much time the child spends in a care setting, for example if most of their time is in nursery, then nursery should be responsible'* (S3, P2). One participant stated the responsibility lies with the '*parents as they [preschool children] are at home more*' (S2, P2). This was supported as it was felt that '*parents did have a responsibility as well when they are with their child'* (S3, S1 and S2). A different view point was that one participant felt '*my son instigates it and then as the parent I follow it. If it's a day when really wet and not able to get outside then I know about it!*' (S3, P1). One question proposed by a participant was '*preschools are dominated by females and wondered if that distorts PA involvement*' (S1, P1). No definitive answer was concluded, but this question did provoke thought amongst the participants.

Knowledge and beliefs about obesity

All parents and staff from all of the settings agreed that when they think about 'obesity' they think about someone who is 'overweight'. This is due to children '*sitting on their backsides, playing computer games*' (S2, P3), '*participating in sluggish behaviour*' (S2, P1) and '*parents giving them process foods and snacks to keep them quiet*' (S2, S1). '*Personally I feel if the parents are overweight then they are not doing the correct things at home regarding eating and PA, then the children see this and think it is normal, this goes to all generations*' (S3, P2). When discussing what counts as obese, it was mentioned that '*they (staff) do not know the weight of the children, so it's their appearance we go by and those children that are 'more chunky''* (S1, S1). One setting said '*we have an obese boy, the boys health is starting to suffer'* (S4, S1), '*children are starting to pick on him, we have informed health visitors'* (S4, S2). It was added that weight is measured '*on a BMI index, I can't imagine an obese three year old child'* (S2, P1). '*I am shocked that some preschool children are obese, I thought their metabolisms are faster. I thought their body's burn junk foods quicker*' (S3, P3).

When asked if children can be fat and fit, all focus group participants said 'yes they can'. This is possible as '*the child still moves around*' (S4, S1) '*it is related to muscles weighing more than fat*' (S1, S1). Equally, it was mentioned that '*children can be skinny and unhealthy*' (S2, P2). Participants opinions of obese children were it is '*not nice to see*' (S1, S2), '*I feel sorry for the child*' (S2, P3), '*it can be a negative judgemental view and opinion of them being fat*' (S4, S2), '*it is not an opinion of the child…a judgement of the parents*' (S2, P1) '*cannot judge as we do not know if the parents have money to buy healthy foods, or if the parents can cook*' (S1, S1), '*sometimes we take things for granted and others may not be able to be healthy*' (S1, P1).

When asked 'why do you think preschool children become fat or obese?' there was agreement from settings with regards to modern unhealthy lifestyles, in terms of lack of exercise and convenience foods. Reasons for preschool children becoming obese have been divided into lifestyle, foods and genetics (Table 3), with one participant feeling that '*obesity is starting more from a baby*' (S2, P3). It was felt by all participants for all settings that Government, Local Government, industry and individuals are all important in promoting interventions to resolve an obesity epidemic, yet participants of setting two all said that '*parents have to take the main responsibility*'. '*A combined effort is important as our local area is good for fun runs for parents and children, so it gets them active, these incentives are important*' (S1, P1).

Participants were asked who should be held responsible for preschool children's weight. All participants stated that it is a responsibility for parents, settings and society. With all the participants from one setting stating it was the parent's

responsibility. It was summarised as some children are at nursery for a while and some are not, the nursery setting is responsible in those hours and parents at home. '*Some children are only at the setting for 3 hours a day, some days a week*' (S4, S2). '*Preschools are not responsible for children's weight, but they are responsible for activities for when they are in settings*' (S3, P1). We '*can't control what the children eat and do regarding activity at home and vice versa*' (S1, S1). Children's weight status and PA levels '*has to involve the home setting as well*' (S2, P1). '*Preschools are important in providing PA, in terms of time and space to burn off energy, yet they are not solely responsible. Preschool does allow parents time to themselves to complete chores and then they can take their children home all exercised and parents feeling relieved that they have completed jobs to not bore their children*' (S2, S1). This was positively supported by a parent in setting two who said she took her '*child out of nursery one day, due to being on maternity leave and noticed the difference as he had not had the structure and PA from nursery*' (S2, P1). However, '*it must be considered that some children at the setting, are only active when in the setting, this informs the planning*' (S4, S1). '*In the end it sometimes feels that the PA of these children are our responsibility as it is the only exercise they participate in*' (S4, S2).

In terms of ideas of social-level interventions that could be promoted, participants mentioned '*in deprived areas, more walking, yet parents do not, there are parks, yet there is the need for more free facilities for children*' (S2, P3). '*Children centres have tried, but these are never fully able to reach the families and children they want to reach*' (S2, S1). '*More people going into schools and preschool settings to help out*' (S2, P1), would be beneficial.

Knowledge of the environment and facilities for PA

When PA was discussed, all of the participants mentioned the outside space as the environment that PA participation occurred in. The equipment, facilities and what the settings are undertaking to promote PA can be found in Table 4. When asked if the participants feel that indoor or outdoor space is more important to promote PA in children, they stated '*both are as important, as in this country we don't have the weather so the children are active in both environments*' (S1, P1 and S1). This differed in opinion slightly as one participant said '*the outside is very important due to getting fresh air, it is important to get out in as much weather as possible*' (S3, P3). In relation to one setting, both staff agreed that '*in this setting the outdoors is more important as it is larger*' (S4, S1 and S2). This was contradicted as it was felt that '*the indoor equipment is important because of the bad weather in this country*' (S3, P1). Staff at one setting stated that '*free flow for the children happens, they play outside when they want, within a set time, this excludes registration, snack and lunch times*' (S3, S2). All participants highlighted that both the outdoor and indoor environment

are important for promoting PA. However, when it came to specifying the facilities and equipment being used in the settings, only the outdoor space was mentioned.

Barriers and facilitators to PA

Time, was considered a barrier by all participants, as parents have busy lifestyles and need to work, therefore, there is very little time for PA at home. A further barrier which was identified by parents was '*cost and the ability to drive to get my son places for exercise*' (S1, P2). Cost was considered a problem because '*when the weather is not good, it is costly for swimming, play pits and structured activities*' (S3, P1). '*Parents have chores to complete, so sometimes the children are put in front of the television*' (S2, P1), this prevents PA from taking place. A preschool child's day was described as, '*some are picked up from nursery at 5.30pm, they are taken home in a car, they have something to eat and then bed and they have no time for being active*' (S1, S1). The lifestyle that parents find themselves in is a key barrier to preschool children participating in PA. This is highlighted, as '*there is a lack of being able to walk a child to nursery*' (S2, S1), this was attributed to parents having a lack of time. The impact these barriers have on the children is '*when they are not active, potentially due to cost and time, the children are crankier and irritated as they have not burnt their energy*' (S3, P3).

When considering barriers that exist at the nursery, suggestions for specific settings were, '*the outside space could be larger*' (S1, P1 and S3, P1), '*having a larger outdoor area, would prevent not allowing children on the climbing frame due to health and safety reasons*' (S3, S1) and the '*way the nursery is laid out sometimes…inside is a barrier due to chairs, so children cannot run around*' (S1, S1), '*on a safety point we have to stop them running inside*' (S4, S2). The barrier due to health and safety appears to '*depend on the member of staff, as I am happy for them [children] to climb and some staff members get nervous at this*' (S4, S1), staff interpretation of health and safety can therefore be a key barrier. A different angle was considered by one setting as they discussed that they '*have a lot to try and fit in to assess the children*' (S3, S2) they have '*a lot more paperwork to complete on the children*' (S3, S1). Lack of time spent devoted to PA was a problem in some settings as '*staff's time has to be spent devoted to learning as well*' (S4, S2). It was also stated by one member of staff, that '*some children prefer to stay inside and not go outside, this is because the child is so active outside of the nursery they 'relax' at nursery*' (S3, S1). This is positive in terms of this setting feeling that some of their children are active at home, but then a barrier for the setting as they struggle to involve some of the children in PA during preschool time.

Knowledge and beliefs of Motor Development linked with PA

There were differed opinions on how you can measure PA. Responses ranged from '*when the children are tired out*' (S1, P1), '*ready for bed*' (S1, P2), '*the magic watches [accelerometers]*' (S2, S1 and P2), '*the watches that measure movement'* (S3, P2), '*look at the size of the child, slim ones are more active, you can see in their physique*' (S2, P3), '*you can tell from their muscle mass*' (S2, P2), '*their behaviour, for example they are more conforming and their ability to learn*' (S2, P1). '*You can tell visually, if they are sedentary for too long, then move them on. When they started they were reluctant to go out on their own, but now they love to go out and play*' (S4, S1), '*observations of them running*' (S1, S1) and '*observing them taking part in running and jumping and how long they do it for*' (S3, P1).

Opinions also differed between participants from different settings in relation to whether it is important to measure PA levels of preschool children. The majority of both staff and parents felt measuring PA was important '*as children like to move and those that do not, need to be identified*' (S4, P1), '*we need to be aware of children who are active or not*' (S1, S1), '*because if children are not active then it affects them physically and mentally, they are slower if not*' (S3, P3), we are '*at a point where we need to, to provide a focus'* (S3, P2), it is important, '*once it allows the children to be active and doesn't hinder them*' (S2, P1). However, some parents and staff disagreed with these opinions, as they felt that measuring PA levels of preschool children was '*not really [important] unless my child was obese and I needed to do something about it*' (S1, P1), and '*not all children prefer being physically active so it's hard to justify this*' (S1, S2). '*We should, but not all people understand what PA is, so it can be hard*' (S2, P3).

The definition of motor skills from all settings and both parents and staff, was very good, with fine and gross motor skills discussed. '*Fine motor skills are manipulation, for example, control of pencil, putting Lego together. Gross or large movements involve coordination of arms and legs, being able to kick a ball, riding a bike, catching a ball*' (S2, P3). One participant compared it to '*using a knife and fork and also ball skills*' (S3, P1). Some said '*at a younger age start with gross and move onto fine skills*' (S1, S1). It was mentioned that motor skills '*build on physical skills*' (S1, S2).

When investigating further regarding what the participants understand about FMS, it was described as '*key required movements, like walking, climbing stairs*' (S2, P3), '*skipping, jumping and hoping*' (S1, S1 and S2), '*movements like running and jumping, which are fundamental to what they do [children] on a daily basis*' (S4, S1 and S2). It was felt that '*we should measure FMS if we are getting into a society that is obese*' (S1, S1). Measuring FMS was viewed as important as preschool children '*need these skills*' (S4, P1). Measurements '*highlight if someone has or has not got the skills, then we [staff] can keep practicing with these skills to improve a child*' (S4, S2). '*It helps improve parent's knowledge; they know what their child should be achieving at their age, then we can help our child*' (S3, P1). '*Our preschool is involved in assessing our children*' (S1, S2). One participant said '*children are not*

always measured, however, as a practitioner I feel it is necessary, as we need to identify those children that require more support' (S2, S1). '*It is good to see ongoing development as we assess fine and gross skills, we need three pieces of evidence to show it has been achieved and not a fluke! There are three pages of A4 on a report for PA development*' (S3, S1), '*we do three reports a year*' (S3, S2)'. However, some people felt '*we need a balance between testing and letting the children move*' (S1, P2); '*as we 'over measure' preschool children*' (S2, P1). '*There are a lot of expectations and children have different skills that they develop at different times and then they all catch up by school, it is too much for preschool children. Let them be children*' (S3, P3).

Outdoor space was referred to constantly, when discussing preschools involvement with the development of FMS. It was felt the outdoor space promoted '*running around*' (S1, P1 and P2). '*The outdoor space where the children can climb and the drama club which involves big movements*' (S1, S1) all develop FMS. '*We [staff] promote gross motor skills probably more so outside, where these can be assessed. Two staff members more so are involved with delivering the P.E. sessions*' (S4, S2). '*We [staff] are always developing their running, jumping and holding a pen, so they concentrate on fine and gross skills*' (S3, S2). It was discussed by one participant that she only has two children so her '*background knowledge is not that good on this area and feel that nursery staff need help to promote this*' (S1, P1).

Staff training on PA

When questioned on preschool staff's training in PA, what it involves and how it can be implemented in preschool settings, then most parents presumed the staff '*have a basic, yet good understanding of PA*' (S1, P1), yet '*I would not fully know*' (S2, P1). One parent believed that staff '*are all NVQ trained and some are working up to degree level, they must have a basic level of knowledge of PA*' (S2, P3). This differed between staff members at different settings as some staff felt that in their training they '*did not learn a lot about PA, more about eating healthy foods*' (S1, S2). In fact '*one member of staff 'today' has gone on an outdoor training course at Coombe Abbey. She will come back with PA ideas and then disseminate back to all staff. That is the nursery stetting's choice not a mandatory thing. Therefore, not all settings will probably do this*' (S2, S1). At a different setting '*two members are fully trained leaders and two that have completed shorter training to accompany colleagues for forest schools*' (S3, S1). Whereas, their was training '*years ago through childcare training on exercise and nutrition, however, training very limited currently*' (S1, S1). Finally, the staff from one setting said they '*are not trained, I feel there is no training available to participate in, it is aimed at more reception age children and staff*' (S4, S1 and S2).

All participants wanted more training for staff on PA and how it can be incorporated into preschool children's day. The staff are always '*willing to accept training, it comes down to money*' (S4, S1). This was considered important '*to keep current and improve knowledge*' (S2, P2). Some settings felt it would be advantageous '*because staff could run the football and drama as opposed to an external company*' (S1, S1). '*Training provides ideas of how to link the EYFS framework into sessions, to ensure the children are more active*' (S4, S2). It is '*hard to free all staff up to complete the training, therefore one doing the training and cascading that information down is fine*' (S2, P3). One staff member agreed with this parent '*due to time and cost, but we [staff] are always happy to be involved with training as it is good for CPD*' (S2, S1).

Discussion

This study is novel, as no study to date has provided an in-depth, qualitative overview of perceptions of environmental influences on PA, of preschool children in a deprived area, from both parents and preschool staff. This study sought to explore opinions of play, obesity, environmental factors, barriers, FMS and staff training. The results highlight that both parents and nursery staff had a good understanding of PA, as they linked it to an increased heart rate, movement through running and jumping and the outdoors. Parents and staff categorised the benefits of PA as physiological, psychological and social. Theese benefits included children burning energy, having greater concentration and socially interaction with other children. Both parents and staff appear to be key sources of PA for preschool children.. However, both parents and staff suggested that it depends where the children spend the majority of their time as to who is responsible for their PA levels but with greater responsibility lying with parents. Therefore, the role of the parents needs to be considered when designing interventions associated with PA for preschool children.

An interesting theme that arose was the topic of obesity. Although this was not a key topic within the focus group schedule, obesity was viewed as important by both parents and staff and they implicitly linked a lack of PA with obesity. When parents and staff were questioned on their knowledge and beliefs on obesity, they all felt that this was a result of the preschool children being more sedentary, lacking any exercise, a result of their lifestyle and related to copying their parents. Obesity was also described as a result of eating unhealthy processed foods. It was agreed that interventions to prevent obesity were required and these should be a combined effort in terms of promotion from the Government, Local Government, industries and individuals. Participants from one setting did however state that preschool should not be responsible for the weight of the children, only for the activities that the children participate in when at preschool. The majority of the findings were that preschool is the main place that the majority of preschool children participate in PA, whether structured or unstructured and for some children the only place they are actually active. The home environment did not appear to promote PA for all preschool children. It has been suggested that lower income households, have greater access to technology that increases sedentary behaviour as opposed to MVPA (Tandon et al., 2012). Engaging and educating preschool children to eat healthy and exercise

more were the key findings.. This emphasises the relevance of preschools maintaining the PA levels that they deliver. It also suggests that future interventions need to target parents as key instigators for PA at home. This is especially important as habitual PA is associated with many health benefits in children, with greater heath benefits associated with higher levels of PA (Janssen and LeBlanc, 2010).

The results of this current study highlight that the outdoors is considered a key environment for PA. Studies have noticed that play space has been significantly negatively associated with sedentary activity and positively associated with vigorous activity (Ridgers et al., 2010), and spacious areas compared to restrictive areas, have children more active in them (Pellegrini and Smith, 1993). Being outside was commented on as being good for the preschool children, as it provides them with fresh air, it was described as a larger area compared to indoors at preschools and it should be accessed in all weathers. Some participants did view the indoor areas as important, because in England we do not always have good weather. During the focus group discussions, there was reference to outdoor equipment such as climbing frames, bikes, balls and slides, when compared to being active indoors; there was more concern for health and safety. Research shows that children engage in vigorous PA when lose equipment for example balls and jump ropes are provided (Wilenberg et al., 2010). Again the facilities that were referred to were the outside area, school fields and playgrounds, with one preschool stating that they use the adjacent school hall for PA. The positive influence of preschools to their children's PA levels and health was evident as all of the preschools promoted PA through different projects. These projects ranged from sponsored walks, daily games such as 'duck goose', involvement of external companies e.g. the 'ladder man' and staff running 'Forest School' sessions. These initiatives affirm the importance of preschool settings as a key instigator in promoting preschool children's PA levels.

Time was a key barrier to preschool children participating in PA. This was associated with parents having busy lifestyles and having little time to dedicate to PA with their children. Work and household chores take time and mean that preschool children can be left sitting watching television rather than participating in PA. Also cost was identified as a barrier, as parents need money to facilitate PA. In preschool settings, opinions were mixed with one setting having very few barriers, to some stating health and safety as an issue, as some staff members are more cautious of the children climbing on slides and being active.

This study discovered differed opinions on some aspects of knowledge and beliefs of FMS linked to PA. Participants stated that PA can be measured in a variety of ways ranging from observing a child's tiredness, their behaviour, their physical appearance, to using the watches (accelerometers). Some felt measuring PA was a good thing as it provides a focus and identifies who is obese and who is not. However, some individuals felt it is only necessary to measure PA if a child is overweight. FMS, including fine and gross motor skills were described appropriately by participants. Whenever development of FMS were considered, the outdoor space was always referred to, especially in terms of assessing jumping and skipping. REFERENNCE???????? Measurement of these was met with a divided opinion, as some felt that as society was becoming more obese, measuring FMS is imperative for preschool children, because if they are weak at any of them, then staff can practice them and also inform parents to work on specific skills. Such opinions would

align well with prior research showing that children with better developed FMS, spend significantly more time in MVPA and VPA and significantly less time in sedentary behaviours, when compared to children with less developed FMS (Williams et al., 2008; Wrotniak et al., 2006). One staff member gave an additional insight that, from a practitioner's perspective, measuring FMS is essential to inform them in terms of development. Conversely, some individuals with a different viewpoint, felt that there needs to be a balance between testing and children moving and enjoying themselves, they do not want 'over measuring'.

Finally, staff did comment that they would like more training as this would ensure they are more competent at delivering PA, and also save the preschools financially as they would not need to hire in external companies. Parents believed that all preschool staff had a basic understanding of PA; some parents believed that staff were all trained to NVQ level and some to degree level. This in reality did vary between settings, as some staff had no specific PA training, whereas, some settings send staff on courses regarding PA. Overall, there is currently minimal training available on PA, and all participants wanted further training for staff on how PA can be incorporated and delivered in a preschool setting. Staff would like to have 'current' PA knowledge., The cost of these courses was a factor that was seen as preventing training from occurring. Therefore, future interventions need to be influential in training staff in preschool settings on ideas for PA for their children.

There are some limitations with this study. The four preschools were from a similar geographical area, therefore it is hard to generalise to other areas. The majority of the sample was Caucasian, it would have been interesting to see more of the viewpoints of black or Asian participants; unfortunately they were not available in this area. This study was however the first to consider the parents and staff's views of PA in a low socio-economic area, when considering environmental issues. Including parents and staff in the focus groups, allowed for a greater discussion and the inclusion of both of their opinions of the preschool and home environment in terms of PA, whilst it prevented bias viewpoints occurring. The main themes that were apparent in relation to PA in preschool children, was the outdoor environment is influential in promoting PA, obesity is seen as synonymous with obesity, time and cost are a barrier for parents in involving their children in PA and staff training on how to implement PA in preschool settings is required. This study has provided crucial data of parent and preschool staff's experiences and beliefs of PA levels and what they believe are the key instigators and barriers when considering increasing PA for preschool children.

Conclusion

This study suggests that preschool settings and the outside environment are the major influences in terms of promoting PA for preschool children. Therefore, the preschool setting may be considered as essential for PA engagement for preschool children from a low socio-economic area. The home environment was identified as needing to be more supportive in promoting PA. Time and cost, were barriers that prevented parents from participating in PA. For the home environment to be more supportive of PA for preschool children, then parents need to engage more in PA,

through activities that bring minimal, if any cost and cut out eating ‘junk foods’. For future interventions, preschool settings need to consider promoting PA even further. This could be achieved through staff attending training, which focuses on receiving ideas on activities that will engage the children in PA. Also preschool staff perceptions of the outside environment e.g. health and safety issues of using the climbing frames, could be challenged. Implementing these ideas would enable preschool children to be more physically active and increase their PA levels, through parental involvement and preschool staff training.

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