Peer mediators, School 5 – Kilde: Charlotte Skau Pawlowski

Promotion of physical activity among children: can we learn from New Zealand recess practices?

INTRODUCTION

Current scientific evidence supports the conclusion that regular physical activity (PA) provides fundamental health benefits for children (Lubans et al., 2010; Tobias et al., 2007; Rothon et al., 2010; Andersen et al., 2006). As a consequence, the World Health Organization (WHO) recommends that children should accumulate at least 60 minutes of moderate-to-vigorous physical activity (MVPA) daily (Currie et al., 2012). The latest national survey indicates that only 26% and 39% of Danish (DK) girls and boys aged 11 years, respectively, adhere to these global guidelines (Rasmussen et al., 2015). Daily MVPA is significantly higher among 10-14-year-old New Zealand (NZ) children; approximately two-thirds of NZ children comply with the WHO guidelines (75% of girls and 86% of boys, respectively) (Clinical Trials Research Unit, 2010). Furthermore, Nielsen et al. objectively measured children's PA during school hours in both DK and NZ, with NZ children being much more physically active in this setting (Nielsen et al., 2012; Nielsen et al., 2010). While the studies used different types of accelerometers, measurement inconsistencies are unlikely to explain the more than 5-fold greater MVPA during school hours in NZ compared to DK.

A growing body of research suggests that PA initiatives based in the school setting can be effective due to the large proportion of time children spent at school (Broekhuizen et al., 2014; Dobbins et al., 2013; Cook et al., 2013). School recess, in particular, provides one of the largest contributions to children's overall level of PA (Nielsen et al., 2011; Ridgers et al., 2006). DK studies have found that movement policy, the physical setting, and staff engagement are important factors for duration, frequency, and intensity of recess PA (Toftager et al., 2014; Pawlowski et al., 2014b; Troelsen et al., 2014). Because of the significant difference in PA between DK and NZ children, we found it important to explore NZ schools' recess practices for possible inspiration.

The aim of this study was to identify potential PA-promoting recess practices at NZ schools that could be transferrable to DK schools. The DK schools ongoing implementation of a new school reform, focusing on creating more PA, provides excellent opportunities to discuss how recess in DK schools might be redefined to increase the levels of PA.

METHOD

Context

In NZ, most primary schools contain students in grades 1-6 (5-12 years old), whereas few schools include some intermediate students at the same site (grades 7-8, 13-14 years old). Students attend school approximately 30 hours per week, and the curriculum includes health and physical education (HPE). HPE is compulsory for all schools up to grade 10, which includes foci on the development of motor skills through movement, the acquisition of knowledge and understanding about movement, and the development of positive attitudes towards PA (Ministry of Education, 1999). A minimum of 60 minutes is dedicated to recess per day, distributed over two breaks: morning tea and lunch. Lunch break is the longest break, lasting 30-60 minutes.

Design and setting

The current study was conducted as an ethnographic field study using participant observations and informal field talks with children and school workers (e.g., principals, teachers and secretarial staff). These methods were chosen to gain insight into the recess practices and the children's




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actions and experiences during recess (Spradley, 1980; Rubow, 2003). The study was carried out in February and March 2014 (late NZ summer) in five public primary schools in the Waitakere region of Auckland, NZ. People of many different nationalities, typically lower to middle class, inhabit the area. The schools differed in background variables but were more or less homogeneous in their recess practice (Table 1).

Table 1. Main characteristic of the five NZ schools in the study

SCHOOL NO.	SCHOOL 1	SCHOOL 2	SCHOOL 3	SCHOOL 4	SCHOOL 5
*Background variables**					
Grade	1-6	1-8	1-6	1-6	1-8
Enrolled students	686	455	373	375	499
Decile**	6	7	4	5	5
Ethnicity	NZ Euro. 50 % Maori 11 % Pacific 9 % Asian 26 % Other 2 %	NZ Euro. 60 % Maori 14 % Pacific 8% Asian 16 % Other 2 %	NZ Euro. 26 % Maori 16 % Pacific 33 % Asian 15 % Other 10 %	NZ Euro. 35 % Maori 21 % Pacific 25 % Asian 7 % Other 7 %	NZ Euro. 48 % Maori 24 % Pacific 14 % Asian 7 % Other 7 %
Recess practice					
Outdoor policy	Yes	Yes	Yes	Yes	Teacher decision
Electronic devices	No	No	No	No	Yes
Recess periods + duration (min.)	MT: 15 LB: 50	MT: 25 LB: 35	MT: 20 LB: 50	MT: 25 LB: 60	MT: 30 LB: 30
Duty teachers per recess	5	4	4	6	2
Organized sport	Yes	Yes	Yes	Yes	Yes
Play-initiating student duties	Yes	No	No	Yes	Yes

* Data from Education Counts, Ministry of Education, NZ
** Decile 1 schools are the 10% of schools with the highest proportion of students from low socio-economic communities, whereas decile 10 schools are the 10% of schools with the lowest proportion of these students.
MT=Morning tea time, LB=Lunch break.

All five schools were recruited to the current study through an existing schoolyard intervention study: The PLAY study. The PLAY study aimed to increase PA and reduce weight gain in NZ school children by expanding the number of permanent schoolyard play facilities. The interventions did not include organizational initiatives, which was highlighted in current study.

Participants
All children attending the five schools participated in current study, comprising a study population aged 5-12 years (grades 1-6) at three schools and 5-14 years at two schools (grades 1-8) (Table 1). Most of the children were NZ European, but a relatively high percentage was Maori, Pacific Island, Asian or from other countries (Table 1). School principals, monitoring teachers and reception workers at the five schools were approached if clarifications were needed in regard to recess practices and actions.

Data collection
The study included one visit at each of the five schools lasting for three consecutive school days, spread out over all weekdays to provide an opportunity to follow children on different schooldays (i.e. 15 days in total). Participant observations took place during the two daily recess periods – morning tea and lunch – and were conducted by the lead author (from DK) and a NZ research assistant. The two observers frequently changed the settings for observation between classrooms, sports halls, swimming pools, libraries, field areas, scrub areas and playgrounds. Observations were documented with field notes and photos (Emerson et al., 2011). The study was approved by Auckland University of Technology Ethics Committee (AUTEC: 10/95).

Analysis
A thematic analysis (Neergaard et al., 2009; Sandelowski, 2000) was used to code field notes and photos thematically with the explicit purpose of identifying recess practices in NZ schools that appeared PA-enhancing and might be transferrable to a DK context without implementation costs. This implied that we omitted a closer analysis of practices related to the climatic conditions and built environment (e.g., school buildings, play facilities and space). At first, phrases from field notes that referred to recess practice were highlighted and grouped from each school. Then themes were developed through a cross-sectional coding and re-coding process, in order to identify commonalities and differences between the schools (Mason, 2002).

RESULTS

The results are presented in six sections in accordance with the thematic analysis. In each section field note extracts or photos are used to illustrate key themes identified in the data.

Outdoor play
At four schools children were required to be outside during recess all year round (Table 1), and children were not allowed to leave the school during recess at any school. The children ate a packed lunch outdoors before morning teatime and lunch break, such that they were already outdoors when the recess started.

> The bell rings once and all children walk or run out from their classroom carrying their lunchboxes. They sit down at the porch floor eating their packed lunch. Some of the kids sit clasping balls, skipping ropes and hula-hoops while eating. Ten minutes later the

> bell rings again and most of the children quickly pack away their lunch boxes and run down from the porch and out in the schoolyard or down to the field (field note excerpt, School 1).

When asking the children if they would rather stay indoors during recess, most children explained that they preferred to stay outdoors because there were more things to do outside. Some children also stated that they could not imagine being indoors during recess because they had never tried this except during inclement weather.

At School 5, the class teacher had the responsibility to decide if the children should stay outdoors or indoors during recess. Nevertheless, at this school most of the classrooms were empty during recess and some were even locked.

No electronic devices

At four schools electronic devices (e.g., mobile phones and tablets) were not permitted during recess. At two of these schools children had limited access to computers during recess on a couple of schooldays, either at the library or in a computer room supervised by a teacher. The principal from School 1 explained that he did not allow the children to bring electronic devices because he found the devices anti-social and preferred children to be physically active in the playground. At one school the children were allowed to use their own electronic devices during recess (Table 1). However, very few children used these electronic devices.

> I [the lead author red.] talk to a group of five older girls who are telling me that they are allowed to use mobile phones during recess. I look surprisingly around the schoolyard where I cannot see any children using mobile phones (field note excerpt, School 5).

Many children told that they did not have a mobile phone or tablet, and some children said that their parents not allowed them to bring their electronic devices to school because the electronic device could break or disappear.

Long lunch break

Three of the schools had a lunch break lasting 50 to 60 minutes (Table 1). According to the observations and teacher statements the children seemed to be engaged in PA for the whole lunch break at these schools.

> The field is crowded with biking and running children until a few minutes before the bell rings where it seems as if the number of children at the field decreases. I [the lead author red.] comment on this to a passing duty teacher who responds that the children always are exhausted after lunch break because they have been playing actively almost an hour (field note excerpt, School 1).

At these three schools teachers explained that a long lunch break allowed organized activities and to open up alternative facilities for free play such as the sports hall and swimming pool. In particular, we observed that the outdoor swimming pools were popular for free play during the lunch break.

Present duty teachers

At four schools 4-6 duty teachers were present in the outdoor areas during recess (Table 1). Duty teachers were in general visible wearing yellow or orange waistcoats. The principal from School 1 explained that the children felt safer if adult pre-

sence was visible and they quickly could spot a teacher if help was needed. Some teachers passively observed the children waiting for the children to reach-out for help, or they walked around enforcing the rules. However, most teachers were interacted with the children by talking and playing.

> One by one four duty teachers enter the schoolyard. They are all wearing a yellow waistcoat and a first aid bag. Several children run to the teachers, as they need help to solve conflicts. Occasionally, two male teachers interact with the boys' soccer or rugby play.

It is clear to see that the boys want the two male teachers to play with them; they kick the ball to the teachers and wait for them to kick it back (reminds me of dogs wanting their owners to throw a stick). Particular one of the male teachers seems very popular. He is talking to all the children he passes and has a large group of children walking with him. One of the children is carrying his first aid bag. Later the teacher finds a guitar and plays a couple of songs and even more children gather around him. When the bell rings, one of the female teachers stays in the

Student duty as play equipment lender, School 4 – kilde: Charlotte Skau Pawlowski

schoolyard until all children have left (field note excerpt, School 4).

Organized sport activities

At all schools children were given the opportunity to participate in organized sport during recess such as netball, softball, rugby, cricket, cheerleading and soccer (Table 1). At some schools children enrolled in a sport at the beginning of the school year and practiced several times a week during recess and participated in tournaments during the weekends. At other schools children could participate in different organized sport activities from day-to-day. Organized sport typically lasted for 30 minutes during lunch break and was organized by teachers.

> A sporty dressed male teacher walks directly from the staff room to a boy sitting in a climbing frame. He says to the boy, "fun game is going on if you wanna come" and walks down to a corner of the field where approximately 15 children are playing softball. He assists a female teacher who acts as referee. She often blows her whistle, which she wears around her neck, and she registers goals using a notepad lying in the grass. Once she stops the game and gives the children technical play instructions. Approximately 20 boys and girls arrive to another corner of the field and sit down in a circle in the grass. A female teacher arrives and changes her shoes to running shoes while she makes two teams. The teacher blows her whistle to start a game similar to American football. Half way through recess the teachers stop the two games and some of the children carry the used play equipment back to the sports equipment shed (field note excerpt, School 3).

The principals explained that the reason that they offered organized sport during recess was to create equal possibilities to attend sport activities because many parents could not afford after school sport. Moreover, they explained that some children were not very skilled in self-organizing play for longer periods of time, which resulted in many conflicts during recess.

Students on play-initiating duties

At all schools older students had recess duties such as library monitors, office duty, garbage collectors, peer mediators and play equipment lenders. The peer mediator and the lender of play equipment functions helped initiate play. The peer mediator function was practiced at School 5. Older students were trained to be peer mediators during recess on a voluntary basis, helping duty teachers in solving conflicts and seeking out play relations for children who had difficulties in being included in play. Schools 1, 4 and 5 had a shed in the schoolyard filled with play equipment (e.g., balls, hula-hoops, skipping robes, hockey- and cricket gear). At these schools the lending of play equipment during lunch break was organized by a group of older students who rotated their duty.

> The bell rings once and four girls go directly to the sports shed. In front of the shed they place a big "No entry" sign and two rows of cones indicating a line. In the shed they place a table in the opening, and rearrange some of the play equipment until the bell rings again. They remove the sign and sit down at the table. Students are lining up, waiting to get equipment and the girls are busy writing down the students' names, classrooms and what they are borrowing.

> When students hand back the equipment they get ticked off the lending list. At the end of the lunch break three of the girls go around the schoolyard each carrying a bag. They search for equipment not handed back and when they find equipment they carefully tick it off from the list (Field note excerpt, School 4).

All duty students took their responsibilities seriously and the system seemed to work well at the schools with help from a coordinating teacher.

DISCUSSION

NZ children are more physically active during the school day than DK children (Nielsen et al., 2012; Nielsen et al., 2010). As school recess is a large contributor to children's overall level of physical activity (Nielsen et al., 2011; Ridgers et al., 2006), the aim of this study was to describe possible PA-promoting recess practices at five NZ schools. Six NZ recess practices with possible PA-promotion were described: outdoor policy, no electronic devices allowed, long breaks, presence of duty teachers, organized sport activities, and play-initiating student duties. In the following discussion we will compare the NZ recess practice with DK practice and experiences in the effort to promote PA during DK school recess. It should be noted that the suggested interventions below should be seen in the light of a health discourse aiming to improve public health.

Recess policies to enhance PA

WHO emphasizes the importance of policies to encourage healthy behavior in schools (World Health Organization, 1998). Additionally, Haug et al. found school policies to increase PA in Norwegian schools (Haug et al., 2010), but in DK it is rare to find school regulations that describe how recess should be organized. Although children are found to be more physically active outdoors than indoors during recess (Dessing et al., 2013), a 'stay outdoors during recess' policy is mostly exclusive to the 1-3 graders in DK. This had led to older students perceiving it to be a privilege to be exempted from this rule, as it is essentially an indicator that they are no longer considered a small child (Troelsen et al., 2014). A DK multicomponent school intervention study, SPACE, implemented an outdoor policy for 6-8 graders at seven schools. At first, the students' responses were mostly negative, resulting in conflicts between duty teachers and students trying to hide indoors. However, the resistance was reduced in the second year of the intervention (Troelsen et al., 2014). Introducing an outdoor policy in DK requires sustained effort given the challenges associated with engaging the oldest students. Nonetheless, an outdoor policy may be acceptable if implemented in conjunction with a ongoing PA-related discourse involving students in the decision-making processes (Troelsen et al., 2014).

On a policy level it is also necessary to respond to the common use of electronic devices during recess in DK schools. A study found that electronic devices during recess was allowed and widely used at 16 out of 17 studied DK schools (Pawlowski et al., 2014b). The need for regulation of smartphone and tablet use is a relatively new issue schools have to face; even DK children voice their discontent with the devices obstructing social interaction and play (Pawlowski et al., 2014b). We suggest that a policy at school level to reduce the use of electronic devices during recess would promote greater engagement in recess PA, similar to most of the NZ schools in our study.

PA promoting recess organization

Organization of recess plays a crucial role to increase PA (Pawlowski et al., 2014b; Troelsen et al., 2014; Toftager et al., 2014). In line with our findings, other studies have found that the longer the recess duration, the more children engage in PA (Ridgers et al., 2007; Parrish et al., 2012). These findings support the introduction of fewer but prolonged recess periods per day in DK schools, similar to the majority of NZ schools in current study. A prolonged break also facilitates the implementation of organized activities and use of alternative facilities such as sports halls and swimming pools.

Additionally, several studies have found that a lack of teacher supervision during recess is a barrier for recess PA (Pawlowski et al., 2014b; Parrish et al., 2012; Stanley et al., 2012). We found more duty teachers were present during recess in NZ schools than generally seen in DK schools (Pawlowski et al., 2014b). Lack of teacher presence in outdoor areas appears to be related to conflicts (Willenberg et al., 2010; Sallis et al., 2001), hence increased teacher supervision in DK schools could result in faster conflict resolution leading to increased PA.

It is evident that recess in NZ schools is much more adult-regulated compared to DK schools. A clear difference between DK and NZ recess is the teacher organized sport activities. A study

Teacher controlled play, school 2 – kilde: Charlotte Skau Pawlowski

found that trained teachers initiating recess activities increased MVPA especially in overweight children (Huberty et al., 2011). In DK schools a long pedagogical tradition has given preference to children's free play and self-directed activities (Ministry of Education, 1960). As a result many feel bored and choose to stay indoors doing sedentary activities (Pawlowski et al., 2014b), or they feel excluded from play (Pawlowski et al., 2014a). The DK SPACE study successfully implemented Kick-starters: teachers educated to initiate a wide variety of recess activities for 6-8 graders (Troelsen et al., 2014; Toftager et al., 2014). Similar to our NZ findings, the teacher-initiated competitions and tournaments appeared to increase recess PA among the older DK children (Mikkelsen, 2014).

Another way to develop more organized activities during recess is stimulating activities initiated by older students. In DK, The Play Patrol (Legepatruljen) is a successful organized play initiative by trained older students increasing younger children's recess PA (Søndergaard, 2013). A similar initiative, GameBoosters, targets 4-6 graders and has been tested at some DK schools. Like The Play Patrol it is a promising initiative with professional support for student education and further training (Dansk Skoleidræt, 2015). However, to further increase recess PA in DK schools, assigning students to duties such as the coordination of play equipment lending is likely to be worthwhile. Several studies have found a relation between the amount of unfixed play equipment and PA during recess (Ridgers et al., 2012; Verstraete et al., 2006; Farley et al., 2008; Willenberg et al., 2010). The play equipment lending system controlled by students will expand the variety of play facilities in the DK schoolyards, which at present may not be sufficient (Pawlowski et al., 2014b).

CONCLUSION

NZ children are more physically active during their school day than DK children. NZ school recess practices were observed in detail using a qualitative approach. Six NZ recess practices with possible PA-promotion emerged: outdoor policy, no electronic devices allowed, long breaks, presence of duty teachers, organized sport activities, and play-initiating student duties. In the light of a health discourse aiming to improve public health, DK schools could further support their students' PA by learning from the recess practices observed in NZ schools. On the basis of our findings we suggest that DK schools should initiate more PA-promoting recess initiatives at a policy and organizational level, as these initiatives are relatively simple and cost-effective, yet have the potential to yield important health benefits. The ongoing DK school reform, focusing on creating more PA, provides excellent opportunities to discuss and implement recess changes.

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