

## Safe outdoor play for young children: Paradoxes and consequences

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### Abstract

In this paper, we investigate some of the factors that may limit opportunities of children in Australia to engage in outdoor physical play. We examine the paradox that 'surplus safety' (i.e. excessive attempts at creating safe environments for children) in child care, school and urban environments, may expose children to significant chronic health risks. In making this case, we examine findings on physical activity levels in child care and restrictive regulatory environments. We also examine restrictions in school playgrounds that result, at least partly, from fears of litigation. Finally, we discuss the results of a pilot project in which loose parts were introduced into a school playground resulting in increased physical activity levels.

**Keywords:** Outdoor play, surplus safety, physical activity, sedentary behaviour

### Introduction

Two separate, but related concerns have recently been raised about children from Western countries. The first is that opportunities for play, particularly outdoor play involving some risk-taking, are diminishing rapidly. Second, children's lifestyles are becoming increasingly sedentary, exposing children to greater risk of obesity and chronic illness such as Type 2 diabetes. Although researchers have recognised that these trends may be related, the substantially divided research efforts in play have focused on developmental and educational outcomes whereas the research efforts in physical activity have been focused on health outcomes. Different teams of researchers have addressed each of these problems. Burdette and Whitaker (2005) recently drew attention to these parallel concerns, and argued for a broader focus, namely that play is good for children. They contend that this more holistic focus will lead to increased activity level and children will receive the additional known benefits of active play (e.g. cognitive, linguistic, social, affective). Whilst this may be so, the advice comes at a time when contexts that traditionally support children's play have significantly altered. Many environments such as homes and other places where children gather, that previously featured high levels of physical activity, now permit passive/sedentary behaviours.

The problem of young children's sedentary behaviours is multilayered (Bundy, Tranter, Naughton, Wyver & Luckett, 2009) and requires more than a change in attitude at single level of society (e.g. parents, teachers). Nonetheless, Burdette and Whitaker's point is appropriate in directing attention towards play rather than programs designed for the sole purpose of increasing physical activity. Play links directly to children's interests and ideally converts sedentary time to physically active time that is part of the child's daily behavioural repertoire. Physical activity programs appeal to some children but are generally an additional one-off task rather than more habitually converting an existing behaviour from passive to active.

Australia has followed the trend of many modern Western countries in having increasing rates of illnesses related to sedentary behaviour amongst young children. This has become a major health issue and priority area for governments and others concerned with public health. Evaluation of physical activity intervention programs, introduced within child care centres, has been difficult due to factors such as different methods in evaluating effectiveness. Ward, Vaughan, McWilliams and Hales (2010) recently reviewed published evaluations of such programs. Only two of five studies with a direct measure of physical activity reported a successful outcome. It is also important to note that the interventions that were found to be effective, required daily sessions for 30 minutes or more and one involved a trained youth coach. Commitment cost of such programs may mean they are unlikely to be feasible for widespread implementation. In the following section, we examine current research on outdoor play. In particular, we extend Burdette and Whittaker's argument that outdoor play is a context that supports physical activity and reduces sedentary behaviour. We also consider current threats to the quality and quantity of outdoor play, in many cases, resulting from excessive concerns with children's safety.

### **Outdoor Play**

A coextensive relationship exists between outdoor and indoor play. However, researchers and practitioners frequently distinguish between these two play contexts to acknowledge the importance of separate contributions to children's physical, social and psychological development. In Western countries outdoor play frequently occurs during scheduled outdoor periods in child care or school recess times, the latter being under threat as the push for increased structure in the school curriculum takes hold (Golinkoff, Hirsh-Pasek & Singer, 2006). Active outdoor play in school recess times is known to be associated with improved academic outcomes (Pellegrini & Holmes, 2006). Time spent outdoors has also been found to be positively associated with young children's levels of physical activity (Sallis, Prochaska & Taylor, 2000).

Outdoor play takes place in a variety of other contexts including children's own adventures in their local environments (Derr, 2006), adventure playgrounds (Staempfli, 2008) and unfenced outdoor preschools (Sandseter, 2009). These types of outdoor experiences seem to provide greater opportunities for child initiated experiences and the type of risk-taking that promotes developmental competencies. Notably, these types of play cannot be considered universally available to children. For example, the outdoor preschools discussed by Sandseter are Norwegian and similar preschool or long day care contexts are not available in countries such as Australia.

### **Surplus Safety and Risk Taking**

It is possible to argue that surplus safety is part of a trend toward risk aversion in modern Western countries. When Jambor introduced the term 'surplus safety', it applied directly to American playgrounds (Buchanan, 1999), yet the same phenomenon can be observed across the globe. Surplus safety refers to a situation where concerns about particular risks lead to

restrictions that may have greater negative impacts than the risks that are being reduced. We have argued elsewhere that excessive concerns about minor injuries commence in infancy and reduce the range of experiences and opportunities that are important for development (Wyver, Tranter, Naughton, Little, Sandseter & Bundy, 2010). Waller (2006) has noted that in the UK (and generally in the education of young children) contradictory views of the child are proposed. On the one hand, a premise of early childhood pedagogy is usually one of the child being competent and capable. At the same time, vulnerabilities and the need to protect children in early childhood settings are emphasised. Such contradictions are evident in Australia with current curriculum documents emphasising the importance of early risk taking, yet this is in the context of regulatory environments that diminish teachers' pedagogical decision making by imposing restrictions on physical features of the outdoor environment, such as height and surfaces (Little, 2006). Although many teachers see such regulations as important (e.g. to impose a minimum standard in child care), such regulatory requirements may lead to excessive protection of young children (Bown & Sumsion, 2007; Fenech & Sumsion, 2007; Maynard & Waters, 2003).

Little (2010) interviewed early childhood practitioners in Sydney centres about regulatory requirements and opportunities for risk-taking in outdoor play. These practitioners were acutely aware of the benefits of risk-taking in outdoor play but at the same time realised that what they considered appropriate was outside of the regulations. Practitioners commented on difficulties confronted when children attempted to modify play structures to increase the level of challenge in the environment. Their role, in order to comply with regulations was to prevent children's creative efforts to restructure their environments to offer challenge within their capabilities. One practitioner commented that "It's totally boring...there's no challenge there for the children. They're not given that bit of challenge to actually build their confidence and in actually doing what we used to be able to do even a few years ago" (p. 12). Questions were also raised about the actual safety of some of the required environmental modifications. It was claimed by one practitioner, for example, that children actually had more falls and grazes on soft fall than on the grass it replaced.

The impact of surplus safety extends beyond child care centres. While teachers in child care centres feel constrained by regulatory requirements, teachers and other managers of outdoor playgrounds for older children often fear litigation. Excessive attempts to reduce injury in children's playgrounds in Australia, a country in which playgrounds are already safe places, is not only expensive but potentially counterproductive. For example, Nixon, Acton, Wallis, Ballesteros and Battistutta (2003) examined injuries and equipment use in Brisbane school and public playgrounds. Rates of injury were estimated at rate was 0.59/100,000 uses of equipment in schools and 0.26/100,000 in playgrounds. They argued that further modifications to school and park playground equipment are likely to yield minimal benefits in terms of injury prevention, but were highly likely to reduce the developmental challenge of equipment. Nonetheless, teachers work in contexts which are perceived to be increasingly litigious (Boyle & Phelps, 2010). Bundy, Tranter, Naughton, Wyver and Lockett (2009) noted that Australian primary school teachers expressed concerns about the devastating personal and professional impact that a low probability injury might have if there is any perception that it is a consequence of their failure to exercise appropriate duty of care. In her discussion of the law of negligence and how it applies in the Australian school context, Newnham (2000) predicts that there may be an increase in negligence cases in education. She argues that it is important for schools and teachers to have a sound understanding of the law of negligence in order to avoid potential litigation.

Play is often seen by adults as taking place predominantly in playgrounds designated as spaces for children. However, children can and do convert any space into a play space, yet some spaces are better suited to children's play activities. Opportunities for spontaneous play in outdoor urban areas have declined in recent decades (Tranter & Sharpe, 2008). A reliance on dedicated play spaces increases children's dependence on adults to take them to these play spaces. These increasingly isolated locations are often inaccessible to children due to real or perceived dangers. One of the real dangers is increased traffic (although pedestrian safety messages can escalate fears – see Jacobsen, Racioppi, & Rutter, 2009).

The paradox of surplus safety is apparent in the case of traffic danger and fear of pedestrian injury as increased numbers of motor vehicles are used to transport children to schools and parks. This not only increases the volume of traffic and therefore the risk of pedestrian injury, but also introduces new sources of risk such as increased exposure to in-car pollution and reduced understanding of the spatial aspects of neighbourhoods (see e.g. Rissotto & Giuliani, 2006) which could potentially lead to increased perception of neighbourhood danger. Interestingly, although increased motor vehicle transportation is often perceived as a modern luxury for children, Francis and Lorenzo (2006) have found children from Italy, USA and Norway, when asked to design cities, note current problems of access related to dominance of motor vehicles in urban areas and proffer designs that minimise the number of motor vehicles and associated speed limits. Unfortunately, in most modern cities, motor vehicle use is given high priority and this has contributed to significant reductions in autonomous and physically active travel (e.g. walking and cycling) by children (Jacobsen, et al., 2009).

In a recent study conducted in four districts of NSW, Jones, Okely, Caputi and Cliff (2010) found overweight boys (5 to 7 years) to spend less time away from their parents than boys with who were not overweight. The authors interpret this finding as most likely attributable to overweight boys avoiding social contexts in which they may have difficulties or be bullied, but an alternative (and not necessarily inconsistent) explanation is that these children have reduced opportunity to engage in experiences that involve more autonomy. The authors also found that both boys and girls who were overweight were more likely than peers of normal weight to engage in sedentary activities.

Restrictions on children's access to open space are not necessarily confined to young children in urban environments. Matthews and Tucker (2006) found teenagers in rural England experience difficulties in accessing open space, often due to unrealistic fears or inappropriate planning. These authors note that a romantic view exists of rural environments as good places for children to grow and learn and yet these locations can be subject to the same difficulties as urban settings. Derr's (2006) research with children from urban and rural locations in New Mexico found autonomous exploration of the larger geographical environment to be important in development through activities involving risk-taking, rites of passage, imagination, respect of animals, understanding of ethnobotany and attachments towards a location. Important experiences of these types are not widely available to children in many developed nations today.

### **Activity Levels in Early Childhood Centres**

In the above sections, we have discussed the reducing options for young children's outdoor play. Education and care data collected in Australia in 2008 revealed most children were involved in formal care in the year prior to school and there had been an increase in formal care arrangements for children 0 to 11 years during the previous decade (ABS, 2009). This is consistent with trends in other Western countries for increased non-parental care (e.g. USA, NICHD, 2006). Perhaps then, changes in care arrangements for young children compensate for

losses occurring in other areas. A complete analysis of this possibility is beyond the scope of this article. Nonetheless, there is evidence from research on children's physical activity suggesting such compensation is not occurring.

Dowda, et al, (2004) identified teacher education level and frequency of field trips (four or more per month) as positively associated with physical activity levels of preschoolers. Measures of physical activity were collected within the centre (not while the children were on field trips) using the Observation System for Recording Physical Activity in Preschools (OSRAP). The relationship between field trips and physical activity is unclear but the authors speculated that it may relate to centre resources. Additionally, children in higher quality centres, as rated using the Early Childhood Environment Rating Scale – Revised Edition (ECRS-R), spent less time in sedentary activities. Trost, Ward and Senso (2010) reviewed some of the factors in early childhood care that are positively associated with preschoolers' physical activity levels. Such factors included staff training and staff behaviour related to physical activity, lower playground density (number of children per square metre), presence of vegetation and use of loose and flexible materials (e.g. hoops, balance beams, balls, bean bags) rather than fixed play structures. Although there is accumulating evidence of factors that are important for promoting physical activity in early childhood settings, Reilly's (2010) review of research evidence involving direct measurement of physical activity in child care centres (e.g. accelerometry, pedometry, observation, heart rate) reveals very low levels of physical activity, accompanied by high levels of sedentary behaviour.

These findings suggest that most formal care arrangements are not currently providing compensation for loss of play space in other areas, at least with respect to physical activity, but it is potentially within their capacity to do so. The findings indicate a set of factors that can be used to develop recommendations to increase physical activity in child care. Such recommendations, however, may have reduced impact if problems associated with surplus safety are not directly confronted. For example, the loose and flexible materials that are associated with increased physical activity were found in Little's (2010) research with Sydney based child care practitioners to create problems because children were elevating balance beams or constructing structures from waffle blocks that exceeded height regulations. As noted previously, practitioners, who understood that children were working within their own capabilities, were nonetheless required to ask children to modify these structures. Increased use of hard surfaces to promote riding and ball play (especially in boys) was recommended in one of the studies reviewed by Trost, et al. (2010), yet as noted previously, soft surfaces have come to dominate playgrounds due to safety concerns.

These examples from various countries may suggest that greater restrictions on young children's freedoms are an unfortunate by-product of modern Western society. If this is the case, then it may be necessary to find other ways to compensate for changes that have occurred to regulations. However, examples from Norway reveal that it is not necessarily the case. For example, Sandseter (2009) highlights the risk-taking that occurs in Norwegian child care. Children have extensive access to outdoor environments, which includes access to features of the environment that are often considered dangerous (e.g. water, heights) and use of tools that are often prohibited for children (e.g. knives). Sandseter (2007a, 2007b) argues that Norwegian kindergarten staff place importance on risky play in natural environments. It is considered an integral part of growth and development.

### **Fixed Structures versus Loose Parts**

In the previous discussion we provided some insight into the multilayered issues associated with opportunities for young children's outdoor play. If changes are to be made, these need, at a

minimum, to be changes that are: a) acceptable to the cultures/communities in which they occur; b) consistent with preferences of children; and c) have some demonstrable benefits. Increasing the quantity of play time available may be a starting point, but is unlikely to be sufficient. For example, Alhassan, Sirard and Robinson (2007) conducted a randomised controlled trial (RCT) to investigate whether changes in the amount of outdoor free play time would lead to a change in the overall daily physical activity levels of preschoolers. Accelerometry measures did not reveal an increase in physical activity level associated with increased time in outdoor play. Whilst this RCT was a relatively small scale pilot study, it does point to the possibility that quantitative change may not be adequate. Change in the approach to outdoor play is also needed.

Play spaces designed for children usually involve large fixed structures that enable engagement in a large range of physical activities. Interestingly, Francis and Lorenzo (2006) found that when asked, children are not necessarily in favour of large spaces set aside for their play. Instead they prefer smaller spaces that are for mixed use (not necessarily just for children) and include flexible recycled materials as well as natural elements. Flexibility of materials and input from children in design are also important. Yet even small spaces in family homes are changing as flexible outdoor play areas are replaced by designer or entertainment spaces (Tranter & Malone, 2004).

Researchers from the Sydney Playground Project recently developed a low cost intervention that led to increases in children's physical activity and playfulness (effect sizes 0.9 and 0.55 respectively) (Bundy, et al, 2008; Bundy, et al, 2009). The intervention addressed children's play rather than physical activity. Changes were made to a school playground by introducing large, loose materials that could be used in unstructured play during recess periods. The loose materials were selected, assessed and trialled by the researchers, and included materials such as boxes, noodles and old tyres (with the insides painted white and with holes to allow water to drain). Although only a subset of children was monitored, the intervention was available to all children. In addition to increases in play and activity levels, teachers reported that children's play was more cooperative and creative. Children required no specific training or encouragement to take up increased activity and teachers did not require additional skills in physical education. These results were from a small scale single school study. A larger scale RCT is currently in progress.

A philosophical shift in considerations of outdoor play in school and child care contexts is also required. In this article, we have emphasised benefits for physical health. Broader benefits, however, may accrue if activities that occur as part of outdoor play are integrated into the school curriculum (see Malone & Tranter, 2003).

### **Conclusion**

The paradox for children's well-being is that a pre-occupation with safety at all costs may well have negative long-term consequences for children, leading to restricted physical activity (and associated health issues such as obesity and Type 2 diabetes), as well as restricted social, emotional and intellectual development. As Bundy et al (2009) argue, there is "a risk that there is no risk" for children's play.

The research on children's play in child care centres and school grounds indicates a decline in both levels of physical activity and in the levels of risk taking that children are allowed to partake in. This decline has important implications for both children's physical health and their levels of development. Interventions based on physical activity programs have had limited success,

partly due to the lack of intrinsic motivation in these programs, and the need for constant adult supervision.

More success has been achieved with interventions based on the introduction of carefully selected loose materials that have no obvious purpose – and hence generate spontaneous play activity amongst children. Such interventions provide opportunities for children to develop holistically – where not only the physical development of children is enhanced, but also their social and cognitive development. Perhaps the critical component in any intervention to encourage children's outdoor play is a change in the perception of risk by teachers and parents. By encouraging a recognition that some risk is acceptable, and that a situation of zero risk is neither achievable nor desirable, children may be allowed to engage in play activities that provide an appropriate range of stimulation to encourage their development.

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