

PHYSICAL ACTIVITY

Correlates of Physical Activity in Early Childhood

Trina Hinkley, BA, Jo Salmon, PhD

Centre for Physical Activity and Nutrition Research (C-PAN), Deakin University, Australia
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Introduction

Physical activity is important for many health outcomes. In young children, physical activity has been negatively associated with weight status¹⁻³ and blood pressure,⁴ and beneficial for bone health.⁵ Physical activity during the early childhood period is also important as that is the time when children can learn and develop healthful behaviours,⁶⁻⁷ such as physical activity, which can then support them throughout their lives. As discussed in the other papers on this topic, the amount of physical activity young children participate in varies widely across studies.⁸⁻¹³ This suggests that some children may not have the opportunities or support they need to be active. It is therefore imperative to understand the correlates of, or factors which might influence, physical activity in early childhood so that support can be given to those children in need.

Subject

Correlates of physical activity in young children have been identified across a number of settings and contexts. For instance, characteristics of the child's demographic and biological characteristics, social and physical environments have all been shown to be associated with young children's physical activity.¹⁴ Developing knowledge of such correlates is necessary so that

interventions to increase physical activity can target those factors.

Problems

Until recently, it was generally assumed that young children were “naturally physically active.” In the last 10 years or so, it has become evident that many young children do not participate in sufficient physical activity for health. Research has begun to emerge about the correlates of physical activity in young children.

Young children spend their time in a range of different settings and contexts. This includes the home with parents or other adults, child care settings with trained or untrained staff, preschool or kindergarten environments where they may be exposed to a variety of different programs, and local neighbourhood environments such as playgrounds and shopping centres. The correlates which might influence physical activity behaviours also vary across those settings and contexts. For instance, in the home environment having someone to play with might be important, whereas at preschool having more outdoor space might help to support physical activity. Identifying correlates across those settings is challenging, and compounded by the child’s inability to accurately self report given their young age and lack of cognitive development. Parents may report on behalf of the child, however, there may be large amounts of time where the child is not in the parent’s company (for instance, while the child is at preschool, kindergarten or child care) and therefore the parent is unable to report on the child’s behaviour or potential correlates during those periods.

Compounding the identification of physical activity correlates is the diversity of measurement methods which have been employed to measure physical activity in young children. They include direct observation, parent-proxy report, *accelerometry* and pedometry. These instruments measure different aspects of physical activity and therefore differences in identified correlates may be evident.

Research Context

Correlates of physical activity are often studied in cross-sectional studies. That type of study design does not allow researchers to make conclusions about causality, that is, researchers cannot definitively state that the correlate being studied directly influences physical activity, only that it is associated with the behaviour. Additionally, many studies which investigate correlates of physical activity in young children use relatively small samples, often fewer than 300 children, and

investigate a small range of potential correlates. As preschool children may be active across a range of environments, it is also important to identify potential correlates in those environments. More recently, a few cohort studies have begun to emerge. Such studies allow the same group of children to be followed over a period of time, and researchers can then make more appropriate conclusions about causality between correlates and behaviour.

Key Research Questions

Key questions include identifying which contexts or settings correlates may operate in, which factors within each of those contexts or settings might be important, and whether correlates vary by characteristics of the child, such as sex, ethnicity or weight status.

Recent Research Results

A recent review of the correlates of young children's physical activity reported that young children are more active if: they are boys, their parents participate in physical activity and are active with their child, and they spend more time outside.¹⁴ Age was found to have no association with young children's physical activity.¹⁴ Although a total of 39 potential correlates had been examined, most had been investigated in too few studies to be able to draw conclusive findings.

Other recent research has investigated the environment at preschools, kindergartens and child care centres. For instance, studies have reported that the ground surface (i.e., grass, asphalt, etc), pathways, play structures and open spaces have been shown to correlate with physical activity.¹⁵ Fewer children per square metre of outdoor space, shorter recess time,¹⁶ active opportunities, fixed and portable play equipment, and staff trained in physical activity for young children¹⁷ have also been found to promote physical activity.

Research Gaps

Little is known about social influences on young children's physical activity. For instance, does parent encouragement and logistic support correlate with higher levels of physical activity in young children as it does for older children? Similarly, with the exception of time outside, little is known about how other child behaviours, such as television viewing or other screen-based behaviours, might influence their physical activity. Cohort and intervention studies are required to identify the direction of causality of potential correlates. As research in this area has primarily relied on small, cross-sectional studies, primarily in the United States and the United Kingdom

some potentially important correlates may have not yet been identified. Additionally, using objective measures of physical activity and standardized protocols for analyzing and interpreting data would aid in comparability of findings across studies. A more comprehensive understanding of children's innate psychological and cognitive drives, although difficult to capture in such a young population, may also facilitate a more comprehensive understanding of children's behaviours and support individual level intervention strategies. Virtually no research has been undertaken in children younger than 3 years of age.

Conclusions

Although physical activity is important for health and development of young children, not all children are meeting the physical activity recommendations. There is consistent evidence that boys are more active than girls, that parents who support and participate in physical activity with their child have more active children, and time spent outdoors is associated with higher levels of physical activity. Further research that follows changes in children's physical activity as they age and examines factors that influence these changes is required. Very few intervention studies that assess the effectiveness of strategies to promote young children's physical activity have been tested, particularly among children younger than 3 years.

Implications for Parents, Services and Policy

Implications for parents

- Young children need parents' and other adults' support to access environments where they can be physically active.
- Young children need to spend time outdoors. Ideally, this should be several hours every day.
- Parents should model healthy physical activity behaviours by being active themselves and also interacting with their children in physical activities such as bike riding, walking and active play.
- Parents need to be aware that their daughters need to spend just as much time and energy being physically active as their sons.

Implications for services

- Preschools, kindergartens and child care centres should be encouraged to provide children with ample time outdoors on a daily basis.
- If inclement weather inhibits active outdoor play, centres should ideally provide children with opportunities to be active indoors.
- Staff should be educated and provided with training in young children's physical activity, including appropriate activities and strategies to support healthy levels of physical activity for the children in their care.
- Girls may need gender-appropriate opportunities to be active, as research shows that they are consistently less active than their male counterparts.
- Physical environments at centres should include a range of activity opportunities to support children's physical activity including a variety of portable and fixed play equipment and adequate shading.

Implications for policy

- Establishing programs to raise awareness of the factors which parents and other care-givers can utilize to support young children's physical activity should be a national priority for every country.
- Governmental policies covering preschools, kindergartens and childcare centres should include requirements for minimum amounts of time outside as well as evidence-based programs which support physical activity, with a particular focus on gender-specific activities to ensure that girls also engage in healthful levels of physical activity.

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