Effectiveness of the PLAYgrounds for Toddlers program on type and amount of physical activity in playgrounds of Dutch preschools: a cluster randomized controlled trial

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Objective:
Preschools are identified as important environments for interventions to improve physical activity in toddlers. The aim of this study is to examine the effect of the PLAYgrounds for Toddlers program on the type and amount of physical activity in playgrounds of Dutch preschools.

Methods:
The PLAYgrounds for Toddlers program was part of a cluster randomized controlled trial in which 41 preschools of child care organization Impuls in Amsterdam Nieuw-West, the Netherlands, were randomly allocated to an intervention or control group. The PLAYgrounds for Toddlers program was designed to teach Early Childhood Education and Care (ECEC) teachers how to stimulate physical activity in the playgrounds of preschools. It focuses on knowledge and skills of ECEC teachers to create a challenging environment within the zone of proximal development of the different toddlers. Two training sessions were organized for in total 4 groups of teachers. Furthermore, a trainer visited each preschool to give specific instructions for improvement. For the purpose of the program, the SOPLAY observation protocol was adapted to the context of preschools. Observers were asked to note the type and amount of activities, to count the number of children per activity, to estimate the physical activity intensity (0=sedentary, 1=light, 2=moderate, 3=vigorous) and to note the different movement skills children used during participation in the activity. The observations were performed at baseline and after 4-5 months.

Results:
In the intervention group, the type of activities quintupled in boys (from 1.12 ±smn; 0.33 to 5.71 ±smn; 0.85) and in girls (from 1.24 ±smn; 0.44 to 6.24 ±smn; 0.44). Furthermore, the amount of activities increased significantly from 1.94 ±smn; 0.77 to 3.12 ±smn; 0.74. In the intervention group, physical activity intensity increased from 0.89 ±smn; 0.31 to 1.64 ±smn; 0.47 in boys and from 0.93 ±smn; 0.52 to 1.69 ±smn; 0.62 in girls. Type and amount of activities and physical activity intensity did not change in the control group.

Conclusions:
The PLAYgrounds for Toddlers program significantly increased the type and amount of activities in playgrounds of Dutch preschools. Physical activity intensity also increased significantly, but is still light-to-moderate.