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Effectiveness of the PLAYgrounds for Toddlers program on amount, types and intensity of physical activity in playgrounds of Dutch preschools

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BACKGROUND

Playgrounds of preschools are identified as important environments for interventions to improve physical activity in young children. Early Childhood Education and Care (ECEC) teachers in preschools are potential stimulating actors on playgrounds.

The aim of this study is to examine the effect of the PLAYgrounds for Toddlers program on amount, types and intensity of physical activity in playgrounds of Dutch preschools.

METHODS

The PLAYgrounds for Toddlers program was part of a cluster randomized controlled trial in which preschools of child care organization Impuls in Amsterdam Nieuw-West, the Netherlands, were randomly allocated to an intervention or control group (Figure 1).

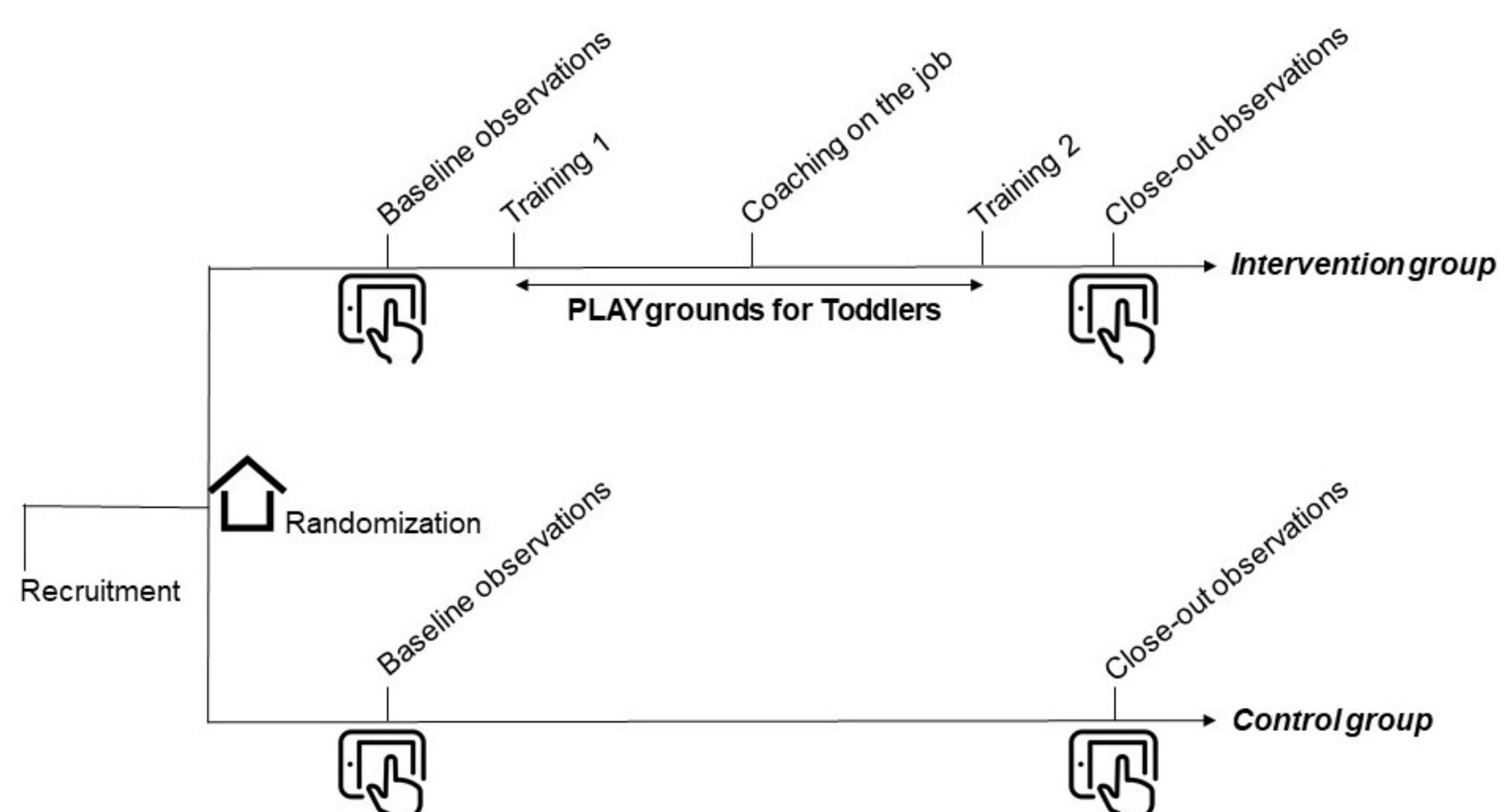


Figure 1 Schematic overview of the study

The PLAYgrounds for Toddlers program was designed to coach ECEC teachers how to stimulate physical activity in the playgrounds of preschools. It focused on knowledge and skills of ECEC teachers to create a challenging environment within the zone of proximal development of the different children. ECEC teachers were taught to organize the playground in zones with different activities. (Figure 2).

Two training sessions were organized for teachers in the intervention group. Furthermore, a trainer visited each preschool to give specific instructions for improvement (coaching on the job, Figure 1).

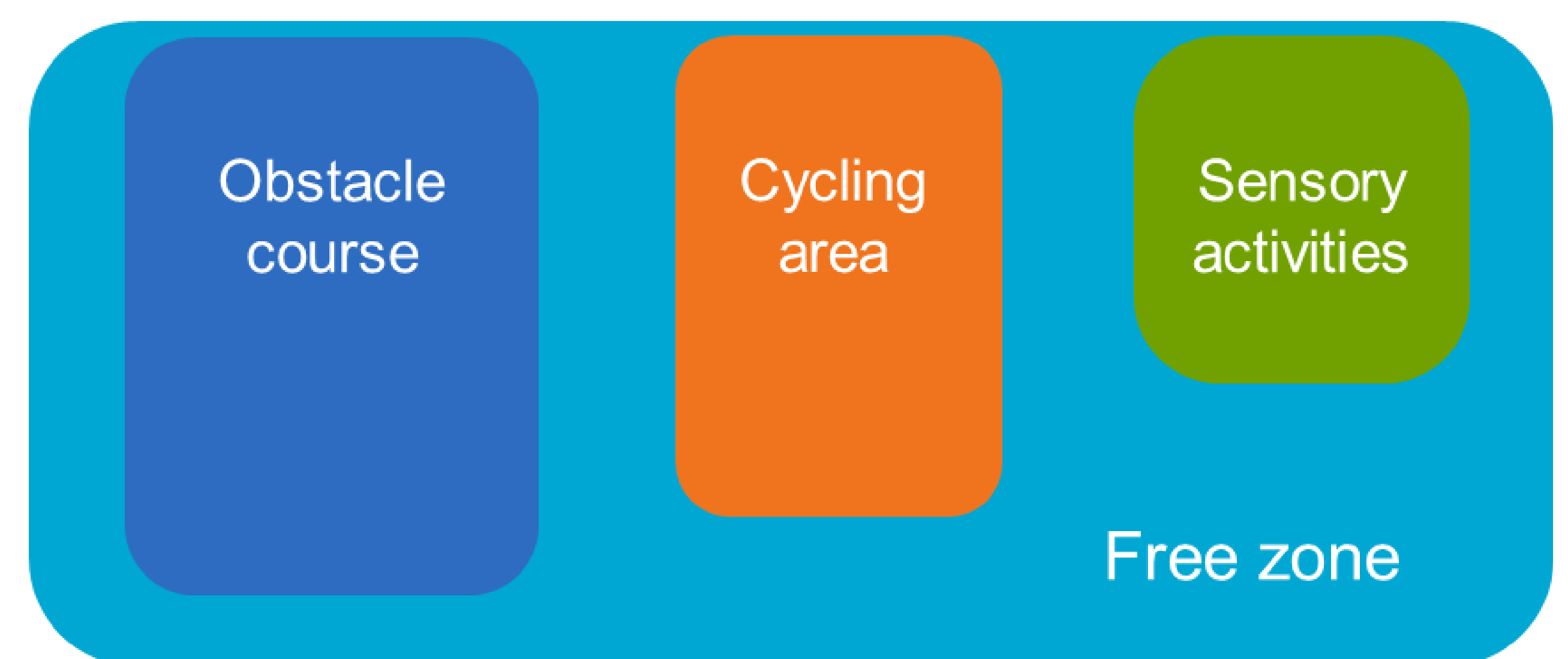


Figure 2. Organization of the playground area in different activity zones

The SOPLAY observation protocol was adapted to the context of preschools. Observers noted the amount of different physical activities on the playground and the fundamental movement skills (types of physical activity) performed by boys and girls. In addition, physical activity intensity was estimated. The observations were performed at baseline and after 4-5 months.

RESULTS

In the intervention group, the amount of different activities increased significantly (Table 1). Furthermore, the types and intensity of physical activity improved significantly in boys and girls. Amount and types of activities and physical activity intensity did not change in the control group.

Table 1. Observed values for the outcome measures

	Intervention (n=17)		Control (n=19)	
	Before	After	Before	After
No. of children on location	9.7 ± 2.6	10.2 ± 3.0	10.2 ± 3.1	10.4 ± 2.8
Amount of different activities	1.9 ± 0.8	3.1 ± 0.7	2.1 ± 0.8	1.9 ± 0.7
Types of PA, ♂	1 (1-1)	6 (6-6)	1 (1-1)	1 (1-1)
Types of PA, ♀	1 (1-1)	6 (6-6)	1 (1-2)	1 (1-1)
PA intensity, ♂	Sedentary	1 (6)	0 (0)	0 (0)
	Light	16 (94)	6 (35)	18 (95)
	Moderate	0 (0)	11 (65)	1 (5)
	Vigorous	0 (0)	0 (0)	0 (0)
PA intensity, ♀	Sedentary	3 (18)	1 (6)	7 (37)
	Light	12 (71)	3 (18)	12 (63)
	Moderate	2 (12)	13 (77)	0 (0)
	Vigorous	0 (0)	0 (0)	0 (0)

Values are mean ± SD, median (P25-P75) or n (%); PA = physical activity

CONCLUSIONS

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