
Physical activity and children's independent mobility in different social contexts

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Introduction

The experiences children have are dependent on their life contexts, daily routines, community and school [1]. Descriptions of environments can comprise many forms and can be based upon either the physical characteristics of the environment, the individual's psychological/behavioral responses to an environment or a combination of the two [2]. The existence of multiple environments will influence the child motor development especially the informal activities performed outdoors, on school playgrounds, with parents and on occupational structured activities [3].

The data available about kids' daily routines show the evidence of the existing restrictions for kids motor and recreational activities in the present days [3]. In the old days, the streets used to be the kids chosen arena to play. They could run across the streets and stay outdoors after dark. Kids used to play all day with no special concerns. Toys were made by themselves or by relatives. Playing games used to happen between groups of children of different ages and gender in public and opened spaces without adult supervision. Children used to have a rich and dynamic childhood through playing games. Playing was a social phenomenon where everyone participated and only later (closer to the present days) this activity has lost its community connections. The social and civilization process that guide us to the modern industrial society also guide us to the contemporary childhood and playing games. The aspects that contributed for this change were the children segregation to a separate group from the adults and the institutionalization of children and the use of playing games as a teaching instrument [4].

Therefore, children of the urban areas have less independent mobility that is the way he or she develops through time a solid representation of the environment (memory, perception, identification) as well as a progressive independence of action in

the day by day environment [5]. This independence of action to the physical environment is influenced by the child affordances that allows the development of autonomy and free playing games, the environment discovery, the relationships with the adults world, the sense of exploring and problem solving, the development of an healthy and active lifestyle and the practice of playing games and physical activity both essential for both emotional and psychological balance [6].

The aim of this study is to present boys and girls independent mobility in two different social contexts of the urban area. For it we've studied children's daily routines, independent mobility and affordances.

Methodology

Subjects

The subjects of our study were a group of 42 children, age range between 8 and 10 years old. We've compared children of a poor social environment (n=21) with children of a better social environment (n=21), that live in the surrounding urban area of the city of Lisbon.

Table 1. Subjects of the study

	Poor Social Context – After School Program					Better Social Context – Private School				
	n	%	M	Min	Max	n	%	M	Min	Max
(n=42)	21	50				21	50			
Girls	8	38				9	43			
Boys	13	62				12	57			
Age			9	8	10			8.9	8	10
African-Portuguese	8	38								

The criteria to select the subjects were the geographic area where the children live and the attendance of an After School Program of a Non Governmental Organization named Prosalis or the attendance of a Private School named Vasco da Gama.

The children that attended the after school program were considered the kids from the poor social context, because they live in social neighborhoods (Olival do Pancas, Azinhaga dos Besouros e Urmeira) with the following problems: poverty, residence with physical structural problems, non-working utilities, safety hazards or sanitation problems, streets with traffic and the absence of playing areas for kids. The fami-

lies are disruptive with few or any studies and most have addictive problems. Most parents have financial difficulties and don't have a work contract.

The children that attended the Private School Vasco da Gama most live on the Municipalities of Sintra and Mafra. These children live in apartment buildings, private condominiums or houses with yards. These families don't have any financial difficulties, most have a college degree and work contracts.

Measures

The daily routines were studied by a diary of activities (adapted from Kittä, 1995 & Arez, 1999). During a week long (7 days) children wrote down their diaries describing the daily trajectories, the destination, if anyone walked them or if they went by themselves, how the trajectory was made (walking, using a vehicle...) and for how long they've stayed on the destination. Each day was divided by morning, afternoon and night to allow more detail on this analysis. By the means of the daily trajectories we were able to identify the different activities done by the children.

The independent mobility was studied through the diary of activities, a questionnaire for children aged between 8 and 10 years old about their daily routines independent mobility (adapted from Hillman et al., 1990; Kytä, 1995 & Arez, 1999) and a questionnaire for parents about their children independent mobility (Hillman et al., 1990; Kytä, 1995 & Arez, 1999). Both questionnaires allow us to determine the level of autonomy of children on the daily situations, on the trajectory home-school, the autonomy on different situations and the aspects that limited children's independent mobility. The parents questionnaire also allowed us to match parents answers with their children responses.

The affordances were studied by conducting individual structured interviews with the children based on Heft's (1988) functional taxonomy.

Results

Daily routines

Children from the after school program perform more activities especially during the afternoon and at night and go to more places in their daily routines.

Children from the after school program perform more group activities and outdoor activities (specially the boys). Children from the private school play more institutionalized/organized activities that doesn't require necessarily the interaction with peers.

Table 2. Mean of the diversity of activities performed during the morning, afternoon and at night by the children

	After School Program			Private School		
	morning	afternoon	night	morning	afternoon	night
Boys	4.86	7.14	3.07	4.60	3.80	2.00
Girls	4.13	6.88	3.00	3.70	3.60	2.10

Table 3. Total percentage of activities performed during the morning, afternoon and night

	After school program		Private school	
	Boys	Girls	Boys	Girls
Watch TV	64.29%	57.14%	75.00%	66.70%
Playstation	50.00%	57.14%	25.00%	11.11%
Watch a sportive event	7.14%	14.29%	8.33%	0.00%
Formal school activities	85.71%	85.71%	100.00%	100.00%
Playing Soccer	71.43%	14.29%	33.33%	25.00%
Playing other team sports	78.50%	57.14%	25.00%	11.11%
Playing	57.14%	71.43%	100.00%	100.00%
Playing with peers	28.57%	57.14%	25.00%	23.00%
Playing with animals	14.29%	0.00%	16.67%	55.56%
Swimming	0.00%	14.29%	41.67%	22.22%
Playing "hide and seek"	28.57%	14.20%	0.00%	0.00%
Riding a bicycle	21.43%	0.00%	0.00%	0.00%

Independent Mobility

The children from the after school program have more independent mobility – we've found significant differences between both groups on the amount of places they go to with their peers and by themselves.

Table 4. Average of mobility permission of children

	After school program		Private school	
	Boys	Girls	Boys	Girls
By himself*	6.64	5.75	1.30	1.10
With adults	7.07	7.75	9.20	13.20
With his/her peers**	9.60	12.33	2.50	2.40

(*F=5.836; p=0.004; ** F=3.428; p=0.027)

When we analyzed the independent mobility of children daily routines, we've concluded that children from the after school program have more autonomy especially on the situations of going and returning from school and playing outside by themselves (boys= 90%; girls= 85.71%). From all the daily routines, children from the private school have more autonomy on riding the bicycle by themselves. Girls in general, have less independent mobility than boys.

Table 5. Percentage of autonomy on the daily activities

	After school program		Private school	
	Boys	Girls	Boys	Girls
Go to school by him/herself	38.46%	25.00%	0.00%	11.11%
Return from school by him/herself	53.85%	25.00%	0.00%	22.22%
Cross the main streets by him/herself	54.55%	28.57%	27.27%	10.00%
Ride the bicycle on the street	87.50%	75.00%	66.67%	44.44%
Play outside by him/herself	90.00%	85.71%	45.45%	20.00%
Take a public transportation	16.67%	12.50%	0.00%	22.22%
Go out after dark	18.18%	0.00%	9.09%	0.00%
Go to recreational activities by him/herself	72.73%	14.29%	40.00%	40.00%

About the autonomy on the trajectories home-school we've concluded that all children from the after school program live less than 2 km away from school. Most of them walk this distance by themselves or with colleagues of the same age/younger or with siblings.

Most children from the private school live more than 2 km away from school and go to school by car, with their parents. This is also one of the reasons why the mean of trajectories on their daily routines is lower than for the other kids.

About the autonomy on the daily situations, again the kids from the after school program have more independent mobility.

Girls in both groups have permission earlier than boys to start having autonomy on the situations described above. We think that this is due to social expectations about women's role on our society.

Parents were asked about their concerns for their kids' independent mobility, on the main reasons for their kids not to go and return by themselves from school. Parents from kids from the after school program, pointed out as the main reasons the child being too young or irresponsible (for boys) and being afraid of assaults or being molested by adults (for girls).

Table 6. Distance home-school, who walks the child to school and type of transportation used

		After school program		Private school	
		Boys	Girls	Boys	Girls
Distance home-school	< 500 m	23,08%	50,00%	0,00%	0,00%
	500 m – 1 Km	61,54%	50,00%	16,67%	25,00%
	1 – 2 Km	15,38%	0,00%	8,33%	0,00%
	+ 2 Km	0,00%	0,00%	75,00%	75,00%
Who walks the child to school	Parents	37,50%	16,67%	72,73%	85,71%
	Other adults	12,50%	0,00%	0,00%	0,00%
	Older school colleagues	0,00%	16,67%	9,09%	0,00%
	Colleagues of the same age/younger	25,00%	16,67%	9,09%	0,00%
	Siblings	25,00%	50,00%	9,09%	14,29%
Type of transportation used	Walking	92,31%	100,00%	0,00%	11,11%
	Car	7,69%	0,00%	83,33%	88,89%
	School Bus	0,00%	0,00%	16,67%	0,00%

Table 7. Age from when the child started having autonomy for several situations

		After school program		Private school	
		Boys	Girls	Boys	Girls
Cross the main streets by themselves	Less than 5 years	0,00%	0,00%	0,00%	0,00%
	5 -7 years	66,66%	100,00%	0,00%	33,33%
	8 – 9 years	0,00%	0,00%	33,33%	33,33%
	+ 9 years	33,33%	0,00%	66,66%	33,33%
Take public transportation by themselves	Less than 5 years	66,67%	0,00%	0,00%	0,00%
	5 -7 years	0,00%	0,00%	0,00%	0,00%
	8 – 9 years	33,33%	100,00%	0,00%	0,00%
	+ 9 years	0,00%	0,00%	0,00%	0,00%
Play outside by themselves	Less than 5 years	10,00%	16,67%	0,00%	0,00%
	5 -7 years	90,00%	83,33%	20,00%	0,00%
	8 – 9 years	0,00%	0,00%	40,00%	100,00%
	+ 9 years	0,00%	0,00%	40,00%	0,00%
Ride the bicycle on the street	Less than 5 years	0,00%	0,00%	20,00%	22,22%
	5 -7 years	85,72%	100,00%	40,00%	55,55%
	8 – 9 years	14,29%	0,00%	40,00%	22,22%
	+ 9 years	0,00%	0,00%	0,00%	0,00%

As for the parents for the kids from the private school they've pointed out as main reasons the distance between home and school and traffic.

Affordances

Both groups have more affordances for sociality (actions of social games, such as: action games, roleplaying games, making noise, helping adults, being with friends, playing sports, sportive games), actions in nature (such as playing with animals, plants, running with no restrictions) and actions in flat surfaces (such as running, riding a bicycle, roller-skating and playing games).

Table 8. Mean of the affordances perceived by the children

	After school program		Private school	
	Boys	Girls	Boys	Girls
Categories				
Actions on flat surfaces	3,50	2,29	3,50	3,50
Actions with manipulation of objects and materials	1,89	2,75	1,56	1,88
Actions with permanent non rigid objects	1,20	1,40	1,00	1,14
Actions on climbing surfaces	1,40	1,25	2,13	1,29
Shelter	1,67	1,80	2,56	1,83
Actions with moldable objects	1,43	1,50	1,25	1,33
Actions with water	1,00	1,00	1,22	1,75
Actions on nature	2,23	2,50	2,73	2,89
Actions of social games	6,57	8,00	7,58	7,00

Discussion/Conclusions

The main transformations that occurred on human life on the last century are tremendous. Children's life style on urban areas is influenced by population density associated to traffic density. If we add the increasing violence and lack of safety we understand why the independent mobility of children in urban areas is lower than for kids in rural areas [8].

The decreasing independent mobility of children is also related to a decreased motor mobility, because kids spend less time on the streets by themselves (e.g., trajectories home-school) or with peers on playing situations. There is a direct relationship between the independent mobility and the cognitive representation that the child has from the environment, games, physical activity and social interactions [5, 6].

Our conclusions are similar to some recent studies that compare children independent mobility in rural and urban areas [9]. What we found is that children of the private school, have less independent mobility than the children from the after school program. This last group has a lot of similarities with the groups described on the studies for the rural areas for the independent mobility and our findings for the children of the private school are similar to the findings on previous studies for the children living in urban areas [9]. Girls in general have less independent mobility than boys. The environments, the parents' expectations and concerns, the daily routines, the living conditions and the amount of time that children spend involved in institutionalized activities are some of the major aspects that contribute for the lack and decrease of the independent mobility in children of the private school. At the same time, in the poor urban social environment (after school program kids) due to the same reasons, kids tend to have a lot more independent mobility. The urban life and the different social contexts coexisting in the cities are major areas of study that might contribute on a large scale to the decrease of physical activity, independent mobility and social interaction.

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