

# Outdoor Play Determinants in Children: are there gender differences?

## Purpose

From an ecological perspective children's outdoor play (OP) might be determined by individual, societal and environmental aspects. This study aims to assess the association between children OP and distance from homes to Large Parks and Gardens (LPG), TV watching time, parents' socioeconomic status (SES) and mother obesity (MO).

## Methods

Homes of 929 children, 465 boys and 464 girls with a mean age of 7,26 ( $\pm 1,97$ ) and 7,30 ( $\pm 1,91$ ) respectively, were geocoded using postal code information collected by questionnaire as well as, OP, TV watching time, SES and MO. Data on LPG was collected in Lisbon Municipality website. Distance between homes and LPG was computed using ArcMap and information was imported to SPSS to perform the statistical analysis. All variables were categorical so Chi-Square was used to compare proportions between categories. Binary Logistic Regression models were fitted to estimate associations (Odds Ratio (OR) and 95 % Confidence Intervals (CI)) between OP and all other variables.

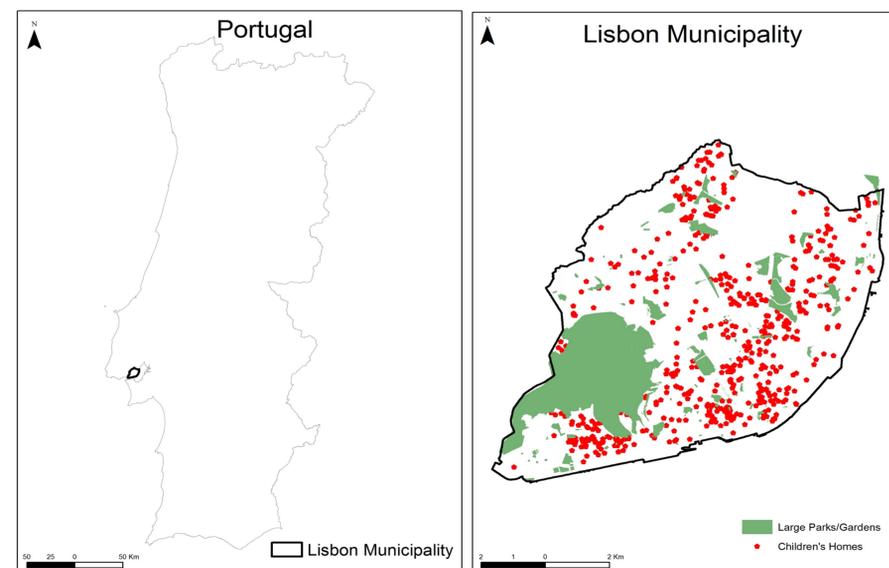


Fig. 1 Study area map and children's homes localization

## Results/Findings

Almost 73% of boys and 69% spent more than 1h on weekdays in outdoor activities. No statistical differences were found between proportions of OP categories and TV watching time, SES and MO, for boys. Only the proportion of girls with 1h or more of OP was significantly higher in the underweight/normal MO class. Boys whose mothers were overweighted were less likely to have an OP higher than 1h (OR=0.54, 95%CI=0.31-0.94) even after adjusting for all variables. Girls with and OP higher than 1h was positively associated with high SES (OR=2.05, 95%CI=1.10-3.82) and inversely associated with obese MO (OR=0.36, 95%CI=0.18-0.73), but only the latter association remained statistically significant after adjusting for all variables.

**Table I** OP time vs distance to large parks/gardens, TV watching time, SES and MO per gender

	Boys		Chi-square p	Girls		Chi-square p
	None	1h or more		None	1h or more	
	N (%)			N (%)		
<b>Distance to Large Parks/Gardens</b>						
250 metres or less	54 (19.9)	218 (80.1)	0.323	63 (23.0)	211 (77.0)	0.544
More than 250 metres	34 (22.2)	119 (77.8)		33 (22.9)	111 (77.1)	
<b>TV watching time on weekdays</b>						
Less than 1h	34 (42.1)	109 (57.9)	0.179	34 (24.3)	106 (75.7)	0.652
1h or 2h	32 (16.2)	166 (83.8)		38 (20.1)	151 (79.9)	
3h or more	9 (23.7)	29 (76.3)		7 (20.6)	27 (79.4)	
<b>Socioeconomic Status</b>						
Low (Father: 9 schooling years)	29 (17.2)	140 (82.8)	0.074	41 (25.6)	119 (74.4)	0.064
Medium (Father: 10 to 12 schooling years)	28 (27.2)	75 (72.8)		23 (24.2)	72 (75.8)	
High (Father: post-degree)	18 (16.2)	93 (83.8)		17 (14.4)	101 (85.6)	
<b>Mother Obesity (WHO cut-off points)</b>						
Underweight/Normal (BMI: >18.49 to 24.99)	44 (17.5)	207 (82.5)	0.068	47 (18.8)	203 (81.2)	0.012
Overweight (BMI: 25.00 to 29.99)	26 (28.3)	66 (71.7)		21 (25.6)	61 (74.4)	
Obese (BMI: >30.0)	5 (15.2)	28 (84.8)		16 (39.0)	25 (61.0)	

**Table I** Association between OP and distance to large parks/gardens, TV watching time, SES and MO per gender

Outdoor Play (None vs 1h or more)	Boys		Girls	
	Crude	Adjusted	Crude	Adjusted
	OR (95% CI)		OR (95% CI)	
<b>Distance to Large Parks/Gardens</b>				
250 metres or less	ref.	ref.	ref.	ref.
More than 250 metres	0.87 (0.53-1.41)	0.92 (0.50-1.69)	1.00 (0.62-1.62)	0.85 (0.47-1.55)
<b>TV watching time on weekdays</b>				
Less than 1h	ref.	ref.	ref.	ref.
1h or 2h	1.62 (0.94-2.78)	1.39 (0.75-2.57)	1.28 (0.75-2.16)	1.64 (0.90-3.00)
3h or more	1.01 (0.43-2.33)	0.93 (0.31-2.75)	1.24 (0.50-3.09)	1.40 (0.50-4.24)
<b>Socioeconomic Status</b>				
Low (Father: 9 schooling years)	ref.	ref.	ref.	ref.
Medium (Father: 10 to 12 schooling years)	0.56 (0.31-1.00)	0.53 (0.26-1.04)	1.08 (0.60-1.94)	1.02 (0.51-2.04)
High (Father: post-degree)	1.07 (0.56-2.04)	1.03 (0.48-2.20)	2.05 (1.10-3.82)	1.62 (0.80-3.29)
<b>Mother Obesity (WHO cut-off points)</b>				
Underweight/Normal (BMI: >18.49 to 24.99)	ref.	ref.	ref.	ref.
Overweight (BMI: 25.00 to 29.99)	0.54 (0.31-0.94)	0.51 (0.27-0.96)	0.67 (0.37-1.21)	0.99 (0.47-2.07)
Obese (BMI: >30.0)	1.19 (0.44-3.25)	1.61 (0.44-5.96)	0.36 (0.18-0.73)	0.26 (0.11-0.59)

## Conclusions

This study results suggests that societal aspects are more likely to determine girls OP compared with boys. OP is an important behavior because it might prevent childhood overweight and obesity thus children should engage in active play activities regardless their gender.

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