

# Neighbourhood socioeconomic inequalities in physical activity opportunities and food choices

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## Introduction/Purpose

- Chronic diseases has been linked to physical inactivity and inappropriate nutrition.
- Research on health-related behaviours has expanded to analyse environmental influences that create opportunities or constrains to people daily choices.
- Food and physical activity (PA) landscapes vary with socioeconomic (SE) levels and SE deprivation has emerged as a factor of neighbourhood vulnerability.
- Physical activity, diet and health can be improved by healthy neighbourhoods characterized by high availability of sport and recreation facilities and a wide access to healthy food.

## Aim of the study

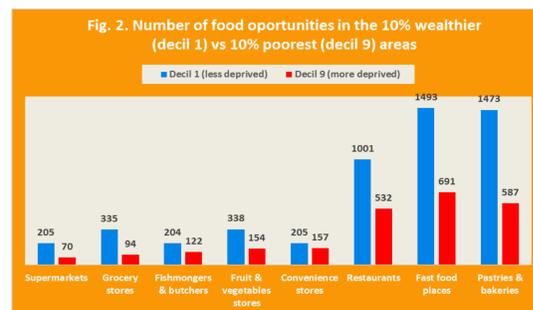
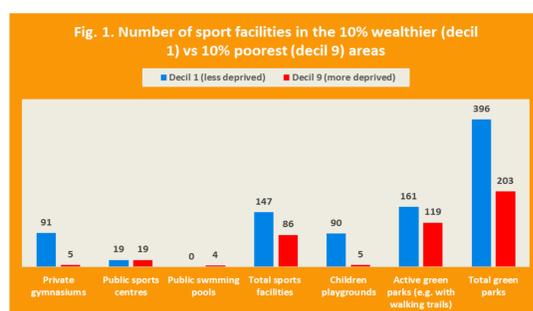
- This study investigated whether the availability and accessibility of food and PA facilities varied to children living in SE contrasting areas of Lisbon.

## Data and methods

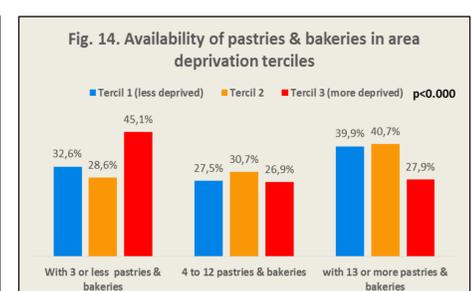
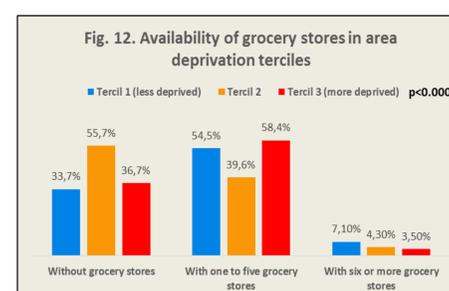
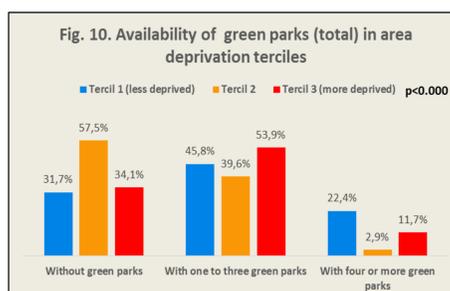
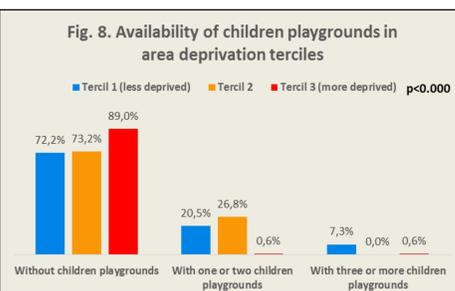
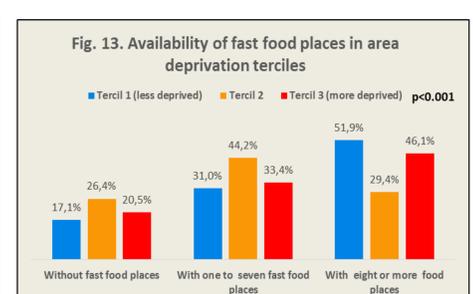
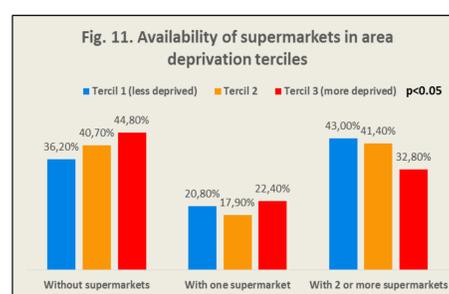
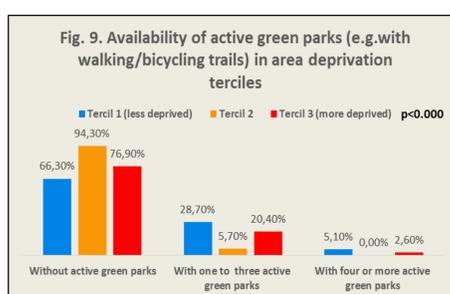
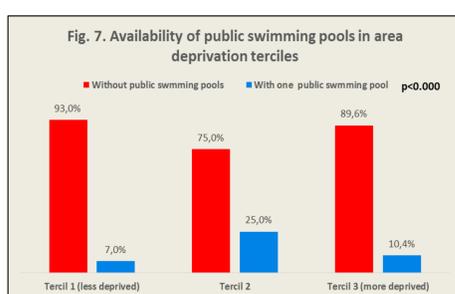
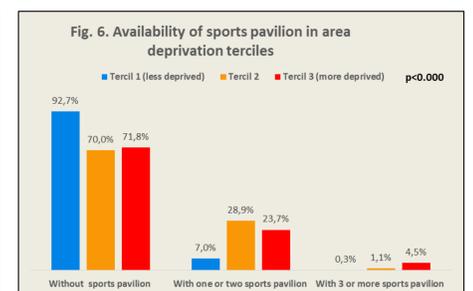
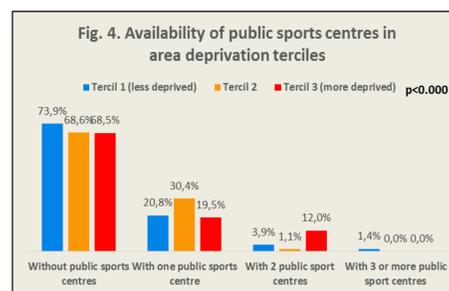
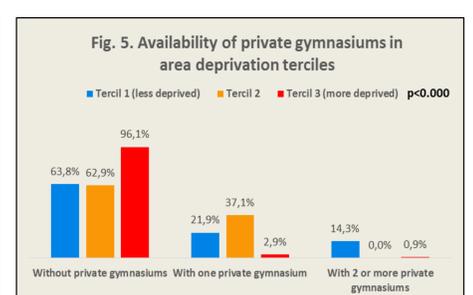
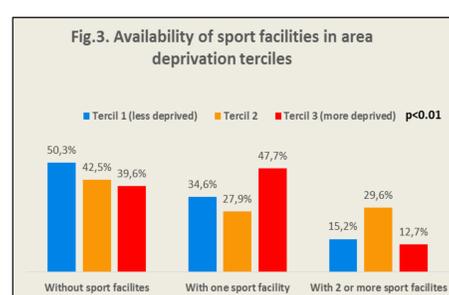
- Data on 944 children aged 3-10 years (50,1% males) studying on private and public schools of Lisbon were collected between March and July 2009.
- Children were geocoded at the address level using a Geographic Information System (GIS).
- Number of food and PA facilities (e.g. supermarkets, groceries, fruit stores, convenience stores, restaurants, fast food places, pastry and coffee places, parks, green areas, swimming pools, sport centres, playgrounds) within a 0,5 km buffer zone around each geocoded participants' address were collected and mapped.
- A neighbourhood deprivation index was created through standardizing of three 2011 census variables – unemployed; unskilled employed; overcrowding – and assigned to each children address.
- Availability of food and PA facilities for children living in different terciles and deciles of area deprivation was compared and tested using chi-squared test.
- Statistical analysis was performed with SPSS 21.

## Results

- Figures 1 and 2 show the total number of selected sport facilities and food opportunities for children living in SE contrasting areas (the 10% richest areas, decil 1; and the 10% poorest areas, decil 9).



- Figures 3 to 14 show the availability of selected sport facilities and food opportunities for children living in different terciles of area deprivation



## Conclusions

- Almost all of the analyzed resources were more prevalent in the advantaged neighbourhoods, including those usually associated with poor nutrition.
- Considering area deprivation terciles, few resources elude the general pattern. Children living in the poorest areas only have better access to public sports pavilion and swimming pools.
- Poor children live in areas with a lack of resources needed to live a healthy life.
- The lower availability found in poor areas is potentially harmful to the health of the lower SE groups and can increase health inequalities.
- Increasing opportunities for healthy food choices and physical activity in the most deprived areas is not just a matter of environmental justice but also an opportunity to shape our places in a healthier way. Furthermore, it is a possible way to improve the residents' health.

## References

- GILES-CORTI, B., & DONOVAN, R. J. (2002). The relative influence of individual, social and physical environment determinants of physical activity. *Social Science & Medicine*, 54(12), 1793–1812.
- FRANK, L. D., SALLIS, J. F., CONWAY, T. L., CHAPMAN, J. E., SAELENS, B. E., & BACHMAN, W. (2006). Many pathways from land use to health-associations between neighborhood walkability and active transportation, body mass index, and air quality. *Journal of the American Planning Association*, 72(1), 75–87.
- Macintyre S (2007). Deprivation amplification revisited; or, is it always true that poorer places have poorer access to resources for healthy diets and physical activity? *International Journal of Behavioral Nutrition and Physical Activity*, 4 (32) doi: 10.1186/1479-5868-4-3232.
- Nogueira H (2010). Deprivation amplification and health promoting resources in the context of a poor country. *Social Science & Medicine*, 70, 1391-1395.
- Villanueva, R.; Albaladejo, R.; Astasio, P.; Ortega, P.; Santos, J.; Regidor, E. (2015). Socio-economic environment, area facilities and obesity and physical inactivity among children.



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