

Childhood obesity and organized sport participation: a view of the gender gap from a perspective of local sports availability in Coimbra, Portugal

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Introduction

Childhood obesity is a selective and discriminant epidemic, disproportionately affecting girls and children with low socioeconomic status. Both individual and environmental factors have been implicated in the actual upward trend. This study aim to analyse gender specific associations between sport activity outside of school and obesity verifying to what extent the local built environment may be contributing to the patterns found.

Data and methods

Data on 1395 children (51,4% girls, 48,6% boys) aged 6.0 –11.0 years studying on private and public schools of Coimbra were collected between March and July 2009. Children's weight and height were measured and age and sex-specific BMI cut-off points were used to define normal vs overweight/obesity. Children's organised sport (OS) engagement was assessed by a questionnaire filled out by their parents. Information on OS availability in Coimbra city and their gender attendance was collected from sport and leisure institutions (e.g., associations, gymnasiums, clubs). Sports were classified according to the gender to whom they are intended in mixed (when attendance was possible and observed for both genders); tendentially male (when attendance was only possible or observed for boys); tendentially female (when attendance was only possible or observed for girls). Associations between BMI and OS engagement were estimated using logistic regressions (adjusted OR and 95% CI were calculated). Differences between tendentially male and tendentially female sport facilities were assessed through a proximity analysis. Statistical analysis was performed with SPSS 21.

Results

Figure 1 and 2 show boys and girls weight status according to OS outside of school. Figure 1 shows that OS participation outside of school has **no significant impact on boys weight status** ($p>0.05$); In opposition, OS participation outside of school has **a significant impact on girls weight status** ($p<0.01$) (Fig.2.)

Figure 3 and 4 show boys and girls weight status according to SES. Fig. 3 shows that SES has a **significant impact on boys weight status** ($p<0.01$), but **no significant impact on girls weight status** ($p>0.05$) (Fig.4.)

Odds Ratios for overweight and obesity are significantly higher (OR = 1,74; $p<0.01$) for girls not engaged in OS outside of school (Fig. 6), but not for boys (OR = 0,81; $p>0.05$) (Fig 5).

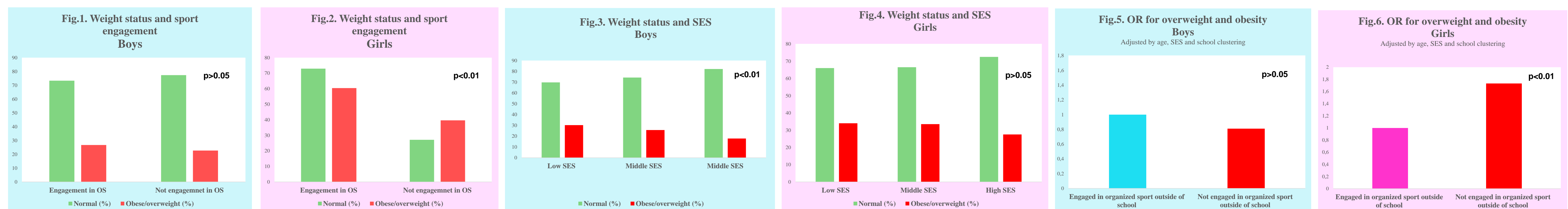
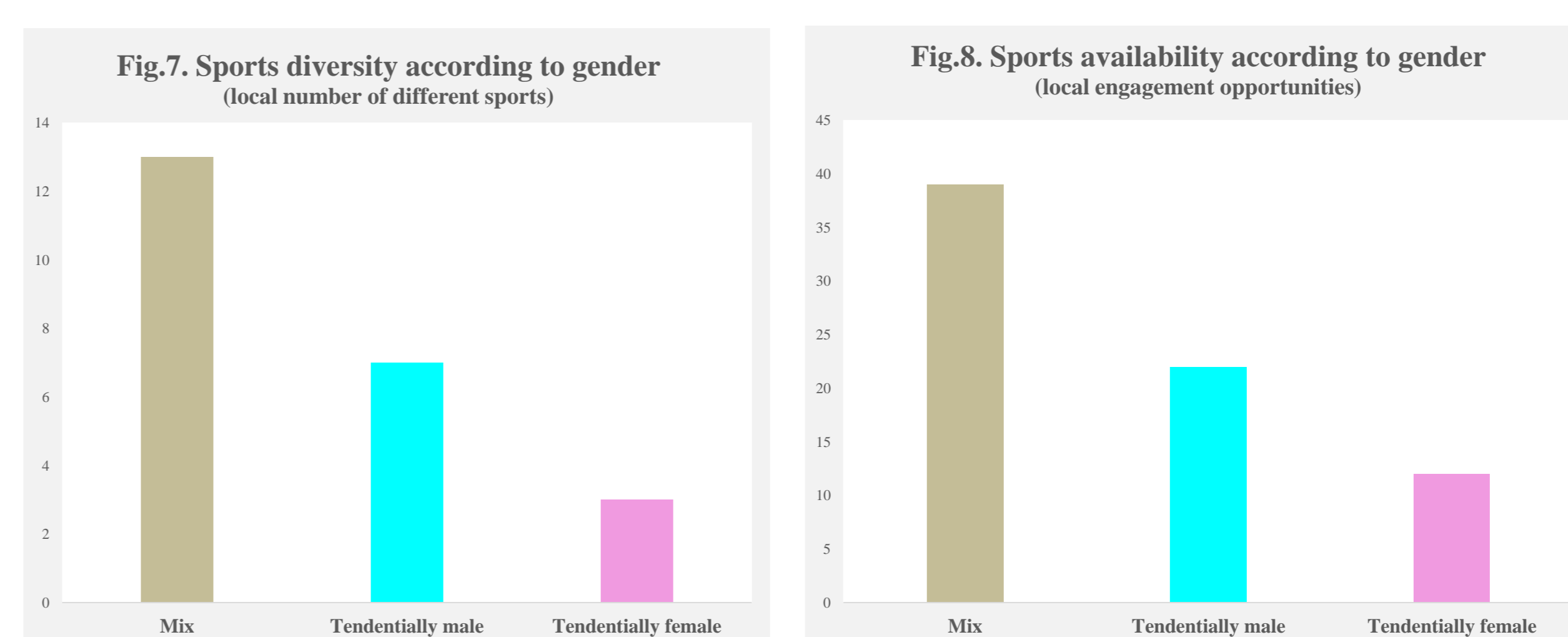


Table 1 shows information on OS availability in Coimbra city: 13 sports were classified as mixed, since they were available and actually practiced by both sexes. For these mixed sports there were 39 local opportunities for involvement; 7 sports were tendentially male sports and 21 local opportunities for engagement were observed; there were 3 tendentially female sports with only 12 local opportunities for engagement. Proximity analysis showed dissimilarity between the availability (type and number) of sports opportunities for girls and boys (Euclidean distance = 13,8).

Preferential targeted gender					
Mix		Tendentially male		Tendentially female	
Type	Number	Type	Number	Type	Number
Rowing	1	Krav-maga	1 ^a	Dance	1 ^d
Tennis	1	Water polo	1 ^a	Ballet	5 ^d
Golf	1	Kayaking	1 ^a	Gymnastics	6 ^d
Jiu-jitsu/MMA	1	Hockey	2 ^b		
Handball	2	Rugby	2 ^b		
Volleyball	2	Football	6 ^b		
Athletics, running	2	Futsal	9 ^c		
Basketball	2				
Riding	2				
Capoeira	2				
Judo	4				
Karate	7				
Swimming	12				
Total: 13	39	7	22	3	12

^a Possible engagement for both sexes but exclusively frequented by boys; ^b Possible engagement only for boys; ^c Availability of only one feminine team; ^d Possible engagement for both sexes but exclusively frequented by girls.

Figure 7 shows the local number of different sports while Figure 8 shows the local number of engagement opportunities, both according to their preferential target gender, highlighting the gap between boys and girls.



Conclusions

This study underline the dramatic imbalance between boys and girls regarding both the local diversity and local opportunity for involvement in OS outside of school. Although it can be argued that girls' underrepresentation in OS reflect lower interest, it was demonstrated that girls have fewer opportunities for engagement in OS, which is a social disadvantage and an environmental injustice. Local-based and gender-sensitive efforts could Improve children health and gender equity.

References

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