

Sugar-Sweetened Beverage Consumption is Associated with School Neighborhood Food and Unhealthy Food Consumption in Urban Schoolchildren Environment in Lebanon and Tunisia



Aim

To examine factors at individual, school, and school neighborhood levels that are associated with sugar-sweetened beverage (SSB) consumption among children in urban Lebanon and Tunisia – two contexts undergoing a nutrition transition with high child obesity rates.

Methods

Study Design:

Two-stage cluster-randomized, cross-sectional study

Study Sample:

School children from grades 4, 5, and 6

Greater Beirut, Lebanon

Data collection: 2022

2,125 school children

47 schools

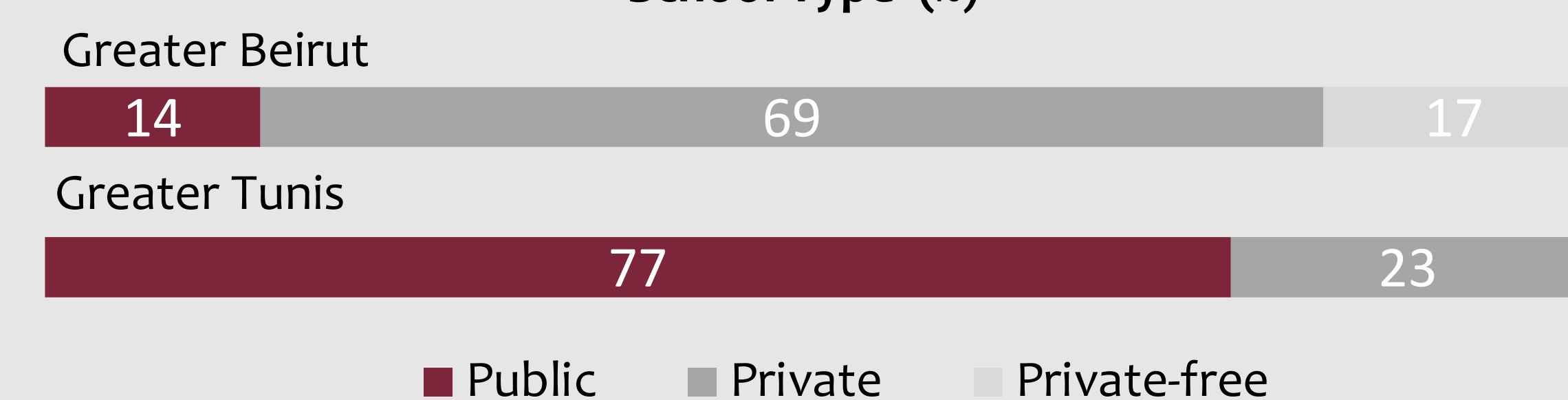
Greater Tunis, Tunisia

Data collection: 2020

2,465 school children

50 schools

School Type (%)



Data Collection:



Child questionnaires: Data on child demographics, eating habits and dietary intake of 110 food items consumed over the previous 24 hours, including intake of SSB

Questionnaires with school directors: School policies and in-school food outlet characteristics



Geospatial data using ground truthing: Density of food outlets in school neighborhoods, defined by an 800m road network buffer around schools

Data Analyses:

Crude and adjusted multi-level logistic regression models assessed factors associated with SSB consumption.

Findings

Greater Beirut

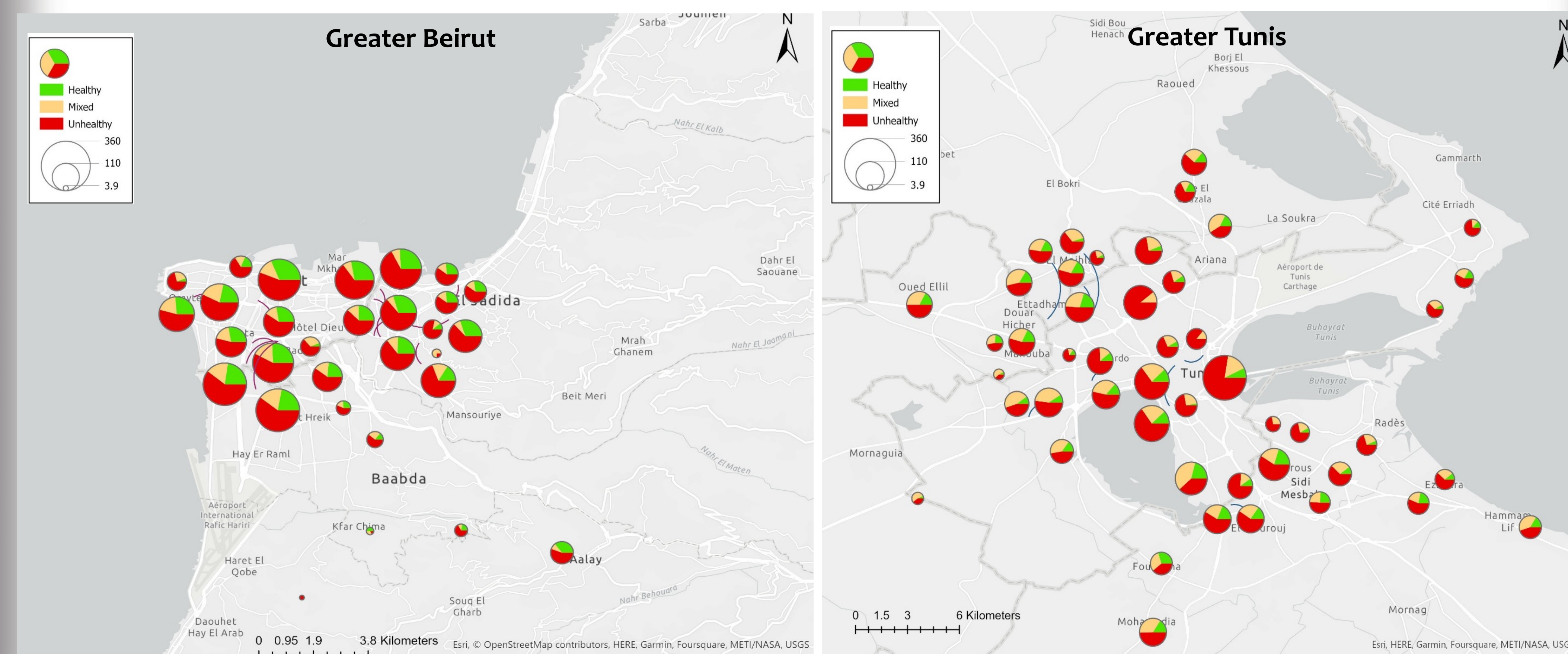
48% Boys 52% Girls

Mean age (SD): 10.7 years (1.2)

Greater Tunis

50% Boys 50% Girls

Mean age (SD): 10.4 years (0.8)



60% of food retailers in school neighborhoods sell unhealthy food items

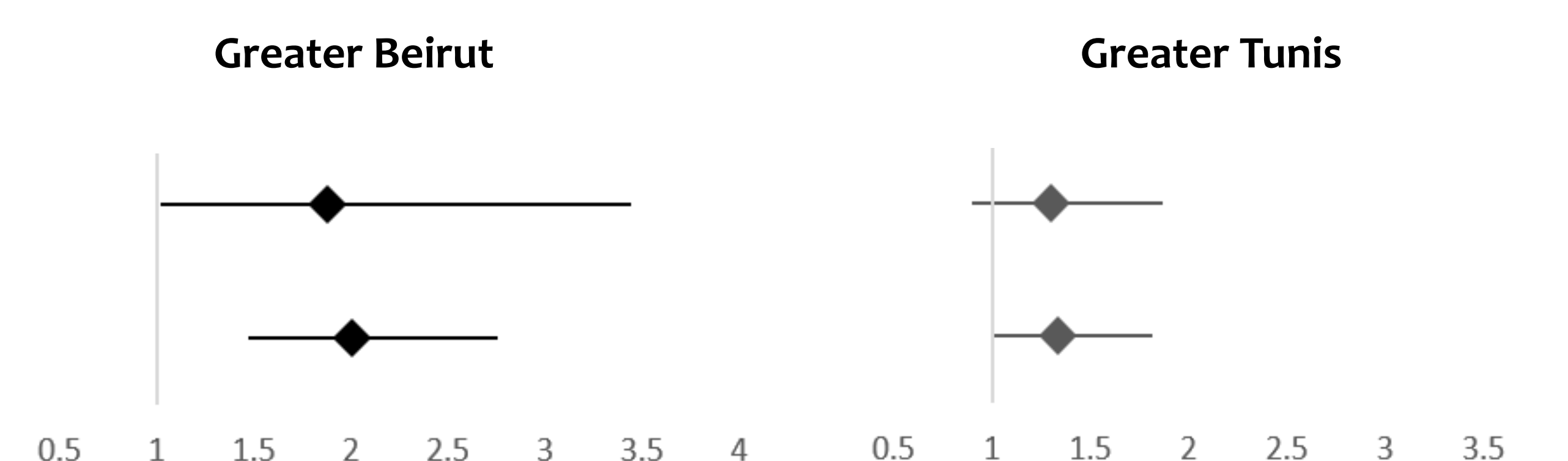
In both settings

36% of school-aged children reported having consumed SSB on the previous day in each of Greater Beirut and Greater Tunis

Density of Unhealthy Outlets in School Vicinity

2nd Tertile

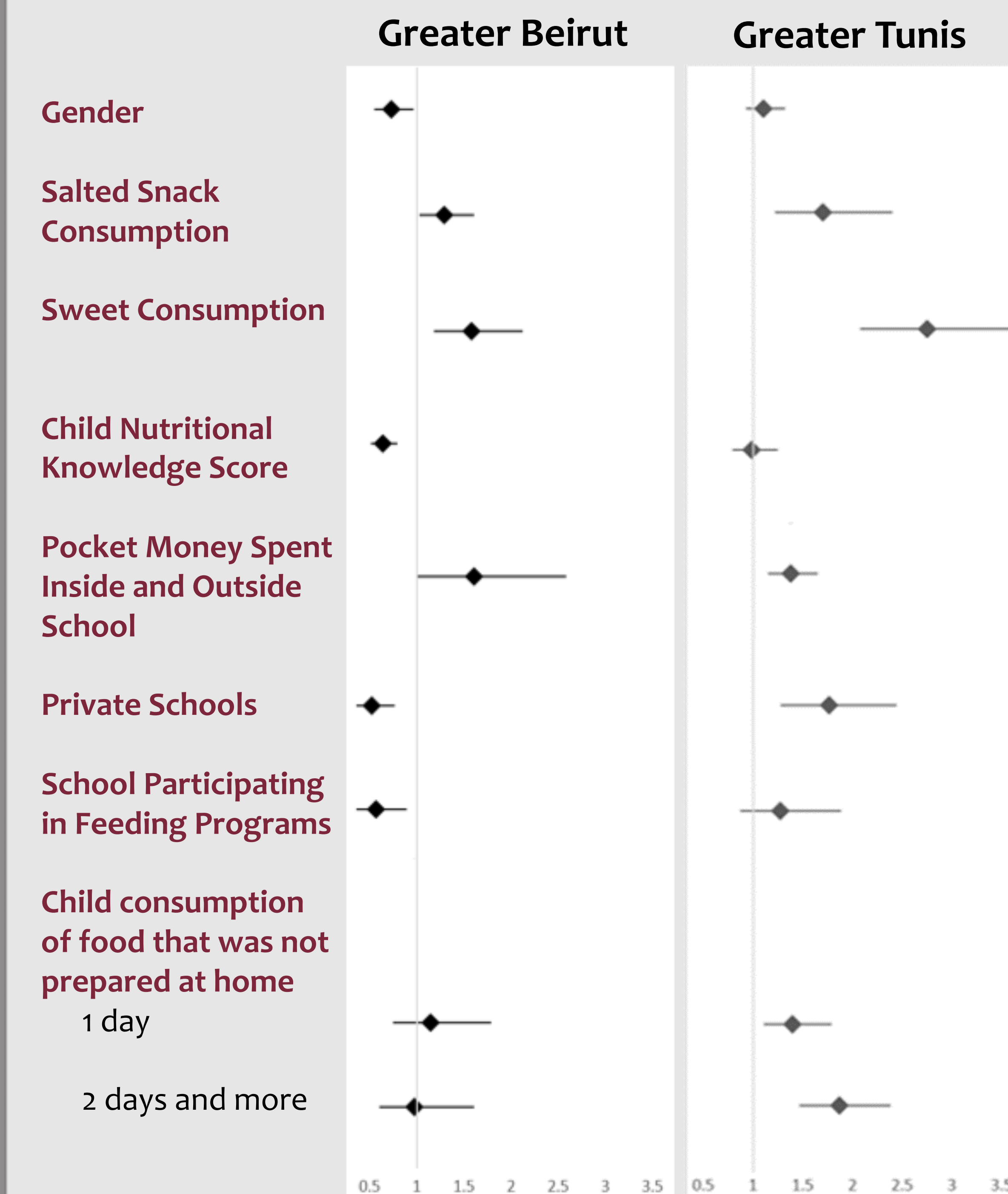
3rd Tertile



Odds of SSB consumption increased in children exposed to higher density of unhealthy food retailers around schools



Additional Associations:



Conclusion

- Density of urban unhealthy food outlets in school neighborhoods, along with ultra-processed food consumption behaviors, were consistently associated with SSB intake in schoolchildren in urban settings in both Lebanon and Tunisia.
- Other factors spanning the socio-ecological model were differentially associated with SSB intake across contexts.
- There is a need for contextually adapted interventions to improve schoolchildren's diets.

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Funded by: IDRC-CRDI, Canada



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