What Drives Schoolchildren's Food Choices? Insights from a Gamified Choice Experiment in Tunisia

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Aim

To identify potential food attributes (accessibility, preparation, and price) and contextual factors (parental supervision and peer influence) which can influence schoolchildren's food choices in urban Tunisia, using a gamified Choice Experiment (CE).

Methods

Study Design: Cross-sectional study using a cluster-randomized sampling method.

Study sample & setting: Greater Tunis, Tunisia

- 2,465 schoolchildren (grades 4, 5 &6)
- 50 schools
- Data collection: 2020

CE characteristics:

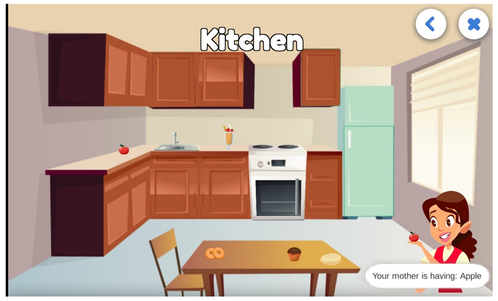
- Gamified CE on tablet.
- Vignettes simulating real-life food choice options for children on a typical school day.
- 6 nodes (breakfast, road to school, recess, lunch, snack and dinner) with different location.

Lumped into 4 nodes based on location (Fig 1).

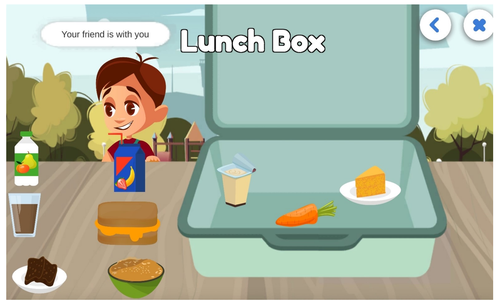
- In each node, a set of 9 items to be chosen from (multiple items can be selected).

3 food types		3 healthiness levels
Beverage	X	Healthy
Main meal		Somewhat healthy
Side meal		Unhealthy

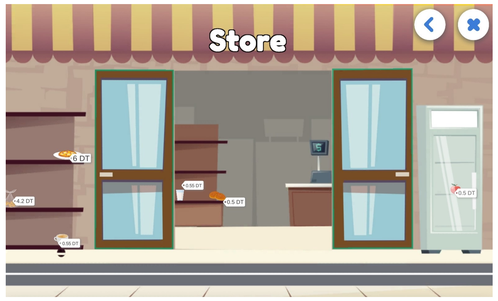
Analysis: Random-effects binary logit models to explore food choices in the four lumped nodes.



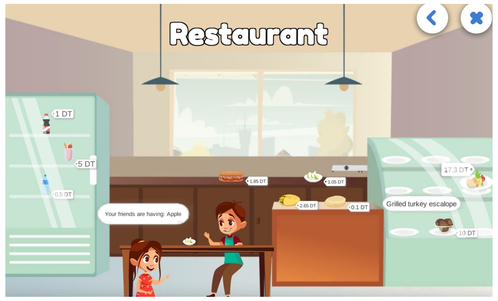
Home node



Lunchbox node



Roads to/from school node



School store node

Figure 1. Examples of the different choice tasks for each node in the CE

Main Findings

Dependency between healthy & unhealthy

Choosing healthy meals significantly increased the likelihood of choosing unhealthy ones and vice versa in all nodes.

Accessibility

At home, food items not easily accessible (i.e., hard to reach) were significantly less likely to be selected regardless of food type or healthiness levels.

Food item‡	OR (hard vs. easy to reach)*
Beverage healthy	0.76
Beverage somewhat healthy	0.67
Beverage unhealthy	0.59
Meal healthy	0.66
Meal somewhat healthy	0.73
Meal unhealthy	0.71
Side meal healthy	0.61
Side meal somewhat healthy	0.68
Side meal unhealthy	0.78

‡Adjusted for preparation, modeling, number of days and food items selection; * Easy to reach is the reference group and p<.01 for all.

Results

43,938 observations

Gender: 50.2% / 49.8%

Preparation time

No significant effect on food choices for all nodes and healthiness levels – may be due to the gamified nature of the choice experiment.

Price

No significant effect on food choice was observed for all nodes and healthiness levels.

Modeling (parents/peer influence)

Presence of a peer eating unhealthy foods significantly increased the odds of choosing unhealthy items on the roads to/from school.

Conclusion

- Reducing availability and accessibility of unhealthy foods and encouraging support from peers and parents could improve schoolchildren's food choices.
- Compensation behaviors might explain children's tendency to simultaneously choose healthy and unhealthy meals.

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