

# Family lifestyle habits: what is passed down from adults to children?

Borgia R.<sup>1</sup>, Castellari E.<sup>1</sup> and Sckokai P.<sup>1</sup>

<sup>1</sup> Dipartimento di Economia Agro-alimentare, Università Cattolica del Sacro Cuore, Piacenza, Italy  
riccardo.borgia@unicatt.it

Poster prepared for presentation at the 8<sup>th</sup> AIEAA Conference  
"Tomorrow's Food: Diet transition and its implications on health and the environment"  
Pistoia (Italy), 13-14 June, 2019



## Background and Objectives

Noncommunicable diseases are responsible for **70% of deaths** worldwide, primarily induced by the use of tobacco, **unhealthy dietary habits, lack of physical activity** (hereafter PA) and alcohol consumption (WHO, 2017). Adopting healthy eating patterns and practicing regular PA, if **learned since childhood and initiated in early life**, may have immediate benefits as well as reduce chronic disease risk when carried into adulthood (Nicklas et al., 2001).

To promote the early adoption of such healthy practices **family has always played a key role** (Patrick & Nicklas, 2005). Nevertheless, the profound and rapid changes of the environments in which children are growing are **calling in question the centrality of the household adults in shaping children habits** (Crockett & Sims, 1995; Story, Neumark-Sztainer & French, 2002).

Focusing on three advisable behaviors, i) **eating food for breakfast**, ii) **doing regular PA** and iii) **consuming five portions of fruit and vegetable** (hereafter FV) per day, and one unadvisable behavior, **snacking**, the study aims at understanding the role of different predictors in driving the above-mentioned children habits, with a more in-depth focus on the household environment.

## Data and Methodology

The study is performed on the microdata of the *Italian Multipurpose Survey on Households Daily Life Aspects* provided by ISTAT (*Italian National Institute of Statistics*) referring to years 2013, 2014, 2015 and 2016.

The dataset consists of **25,265 children** belonging to **16,893 households**. Children has been identified as individuals younger than 18 years old. All analyses were conducted using StataMP statistical software version 12.0.

To study the children behaviors (Table 1) has been used the multinomial logistic (MNL) regression. The regressors (Table 2) are all treated as discrete variables. Once estimated the coefficients they are then used to compute the discrete marginal effect on the observed children behaviors (Table 3).

## Summary statistics

Table 1. Observed children behaviors and summary statistics.

Variable	Code	Description	Relative frequencies
eating breakfast	1	Eating food for breakfast (with or without drinking)	81.44%
	0	Not eating: breakfast skipping or just drinking	18.56%
PA	1	Doing regular physical activity	49.36%
	0	Otherwise	50.64%
snacking	1	Daily consumption of savory snack (potato chips, popcorn, etc.)	13.61%
	0	Savory snack consumption lower than once a day or null	86.39%
5 fv day	1	Consumption of the 5 daily-recommended portions of FV <sup>a</sup>	5.74%
	0	Consumption lower than 5 portions of FV a day	94.26%

<sup>a</sup> According to FAO/WHO (2003) one portion is defined as 80 g of fruit or vegetable.

Table 2. Model regressors and selected summary statistics.

Variable	Code	Description	Summary statistics
age children age	0	3 - 5 years old	19.24%
	1	6 - 10 years old	33.42%
	2	11 - 13 years old	19.97%
	3	14 - 17 years old	27.37%
gender children gender	0	Male	51.42%
	1	Female	48.58%
adults behavior <sup>a</sup> share of adults in the household manifesting the investigated children behavior	0	0% ( <i>adults share</i> = 0%)	13.65%    67.12%    92.95%
	1	< 50% ( <i>0% &lt; adults share &lt; 50%</i> )	3.63%    5.91%    2.29%
	2	50% ( <i>adults share</i> = 50%)	21.35%    16.63%    3.33%
	3	> 50% ( <i>50% &lt; adults share &lt; 100%</i> )	6.45%    1.86%    0.30%
	4	100% ( <i>adults share</i> = 100%)	54.93%    8.47%    1.13%
adults fv <sup>a</sup>	2 - 10	Household mean number of FV portions daily-consumed by adults	Mean 2.88 SD 0.98
geographical geographical distribution	0	Northern Italy	42.27%
	1	Central Italy	16.23%
	2	Southern and Insular Italy	41.49%
degree all adults in the household hold an university degree	0	No	90.99%
	1	Yes	9.01%
adults obese <sup>b</sup> share of obese adults in the household	0	0% ( <i>obese adults share</i> = 0%)	82.25%
	1	< 50% ( <i>0% &lt; obese adults share &lt; 50%</i> )	4.76%
	2	50% ( <i>obese adults share</i> = 50%)	10.42%
	3	> 50% ( <i>50% &lt; obese adults share &lt; 100%</i> )	0.65%
	4	100% ( <i>obese adults share</i> = 100%)	1.92%
adults number	1 - 6	Number of adults within the household	Mean 2.19 SD 0.73
adults female share of female among the household adults	0	0% all male	1.30%
	1	< 50% male prevalence	8.64%
	2	50% no prevalence	70.63%
	3	> 50% female prevalence	9.60%
	4	100% all female	9.82%
children number	1 - 9	Number of children within the household	Mean 1.88 SD 0.79
year	0 - 3	Years of the survey: 2013, 2014, 2015, 2016	

<sup>a</sup> Only in the model for studying the children FV consumption the variable *adults behavior* has been substituted with the variable *adults fv* to better observe the relation between children and household behavior.

<sup>b</sup> According to WHO a person with a *Body Mass Index* of 30 or more is generally considered obese.

## Results

Table 3. Discrete marginal effect of the most significant predictors expressed as percentage change <sup>a b</sup>.

Predictor	Class	Observed children behavior			
		eating breakfast	PA	snacking	5 fv day
age referent class: 3-5 years old	6-10 years old	-1.40**	35.22***	3.78***	1.65**
	11-13 years old	-8.74***	37.61***	7.12***	0.99
	14-17 years old	-15.51***	29.38***	7.06***	3.55***
gender referent class: Male	Female	-3.27***	-8.71***	-1.33***	1.19**
geographical referent class: Northern	Central	1.06	1.96**	-0.79	-1.32*
	Southern and Insular	-0.14	-14.27***	6.03***	-1.52**
degree referent class: No	Yes	2.72***	13.67***	-6.49***	1.05***
adults behavior referent class: 0 %	< 50%	6.01***	19.01***	25.93***	
	50%	12.23***	19.28***	29.39***	
	> 50%	13.53***	33.98***	56.27***	
	100%	20.53***	29.24***	59.41***	
adults fv <sup>c</sup> referent class: 2	3				2.09***
	4				7.88***
	5				37.73***
	6				46.28***
	7				68.55***
	8				54.51***
Number of observations <sup>d</sup>		24,587	24,918	24,139	6,808

\*\*\* p < 0.01; \*\* p < 0.05; \* p < 0.1

<sup>a</sup> Marginal effect computed as discrete change (%) of the partial derivative with respect to each class from the referent one.

<sup>b</sup> The predictors effect has also been controlled by the following variables: *adults obese*, *adults number*, *children number*, *adults female* and *year*.

<sup>c</sup> The marginal effect of the classes 9 and 10 is not computed because of missing values.

<sup>d</sup> The difference of the number of observation is due to the presence missing values.

## Conclusions and policy implications

As shown in Table 3, the likelihood of observing the studied children behaviors increases with the share of adults manifesting the same behavior in the household (except for PA). Hence data suggest that **family still plays a role in influencing some children lifestyle habit**, although unevenly.

Indeed, the study shows that the habit of practicing regular PA is much more likely to be passed down than eating for breakfast, although they are both less likely than daily-snacking. This might suggest that **unadvisable behaviors are more liable to be emulated than the advisable ones**.

Finally, the research tries to individuate **priority targets for children health promotion policies**: Southern Italy and – limited to some habit – 14-17 years old.

Further developments of the research will involve widening the focus from the current household mean behavior to the one of each individual and enlarging the number of the observed – advisable and unadvisable – habits. Finally, the study will attempt to identify some household characteristics liable to predict the overall success of the passing down of lifestyle habits.

### Selected references:

- Crockett, S.J., & Sims, L.S. (1995). Environmental influences on children's eating. *Journal of Nutrition Education*, 27(5), 235–249.
- FAO/WHO (2003). Diet, nutrition and the prevention of chronic diseases. Report of a Joint FAO/WHO Expert Consultation. Geneva, World Health Organization (WHO Technical Report Series, No. 916).
- Nicklas, T.A., Baranowski, T., Baranowski, J.C., Cullen, K., Rittenberry, L., & Olvera, N. (2001). Family and child-care provider influences on preschool children's fruit, juice, and vegetable consumption. *Nutrition Reviews*, 59, 224–235.
- Patrick, H., and Nicklas, T.A. (2005). A review of family and social determinants of children's eating patterns and diet quality. *Journal of the American College of Nutrition* 24(2): 83–92.
- Story, M., Neumark-Sztainer, D., & French, S. (2002). Individual and environmental influences non adolescent eating behaviors. *Journal of the American Dietetic Association*, 102(3), S40–S51. Supplement.
- Tinsley, B. J. (2003). *How children learn to be healthy*. Cambridge, England: Cambridge University Press.
- World Health Organization (2017). Noncommunicable Diseases Progress Monitor, 2017. Geneva, Switzerland.

### Acknowledgments:

This study was supported by the Ph.D. in Agro-Food System (Agrisystem) of the Università Cattolica del Sacro Cuore (Italy).