

## **How and when do children inherit bad nutrition and physical activity habits?**

### *Author*

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### *Introduction*

It is no hidden fact that obesity rates are on the climb, especially within adolescents. Today, nearly one in three children is overweight and one in five is obese or 31 percent and 17 percent respectively.<sup>i</sup> These numbers are higher within minority groups, such as African Americans and Hispanics, where 40 percent of kids are overweight.<sup>ii</sup> Despite the increasing rates in obesity, there is also an alarming rise in food insecurity. In 2012, the USDA made the first major changes in 15 years to school nutrition programs. These changes addressed multiple concerns about childhood obesity, but did very little for food insecure households. The Hamilton Project conducted a study, concluding that almost one in five children lived in food insecure households in 2014, which coincide with the obesity rates for children.<sup>iii</sup>

Nutrition and physical activity habits of school-aged children have previously been studied, with researchers looking for patterns among different groups. One question that this study will examine is the relationship between household characteristics such as head of the household's birth location and how that affects school-aged children's daily activities and health and dietary status. This will serve the purpose to identify a pattern of whether or not previous cultural habits of those born outside of the United States will translate into habits within their school-aged children. Historically, most other countries do not consume processed foods as heavily as Americans do, which may prove to be beneficial to children born within an immigrant family. Another area that will be looked at is if the nutrition and physical habits get better or worse as the subject ages. The purpose of examining these specific topics is to determine at what age children become susceptible to inheriting certain habits that might significantly affect their health outcomes.

### *Data and Methodology*

This study makes use of the National Health and Nutrition Examination Survey (NHANES) dataset for 2011 through 2012. Although majority of the data from NHANES 2013-2014 are available, Healthy Eating Index (HEI), which is one of the important variables of interest, is not yet released from that two-year period for public use. NHANES utilizes a complex, multistage approach in identifying a sample of about 12,000 individuals per two-year survey cycles. There are multiple advantages in using this data. First, it is the most complete dataset available that includes variables specific to the research that is being conducted. Income, total nutrients, physical activity, time spent in front of a television or PC, eating occasion and where the meals were consumed, food security, body measurements, and the head of the household's information is all included along with many other variables. Second, in addition to providing useful health and consumption related variable, NHANES provide detailed measurement of individuals' diet quality, the Healthy Eating Index (HEI). The HEI available from NHANES consisted of 12 components based on per-calorie consumption of various foods and/or nutrients. Each food component is assigned a score depending on the type of food consumed and the final score will range from 0 to 100. Lastly, the dataset is on individuals ages two and older, which is helpful in

this particular study's focus on school-age children ages four through 19. Some questions asked were specific to youth; whereas others were directed at all study participants. Descriptive and multivariate analyses are used in this study.

### *Preliminary Results*

The NHANES dataset has a large enough sample to gather adequate results on the topic that this particular study addresses. The data are extracted and clean and ready for the analysis. From a total of 9,756 observations from NHANES 2011-2012 data we selected only children of ages four through 19. The resulting sample consists of about 3,000 observations. Roughly 30% of observations in our sample are children of ages 4-7, 29% ages 8-11, 21% are 12-15 year olds and 19% are 16-19 year olds. We observed that 34% of children in our sample had household heads that were born in a country other than US.

### *Potential for Initiating Discussion*

If the findings are in favor of immigrant's children possessing healthier habits than the children of American born citizens, then the discussion of how to properly educate and create healthier actions among school-aged children will be present. Further research can be done to examine how long it takes for cultural practices of immigrants to dwindle and American habits start to take over, such as consuming more processed foods, eating more meals away from the home, exercising less, spending more time in front of the television or with technology, etc.

In the case that the findings are different than what we expect, then the discussion can be centered around why that may be so. For example, if the head of the household's birth location has no statistically significant effect on their school-aged child's health and nutrition outcome, then what other factors may be attributed to the difference in the health status of children with multiple similar characteristics. Some similarities that can be examined are income, ethnicity/race, age, activity level such as exercise, hours watching TV, hours spent on PC, expenditures on food and other items, food consumed at home and away, food security, etc.

Through the process of distinguishing what factors influence school-aged children's habits, we can then begin the task of determining how to make changes that will create a positive shift towards healthier decision-making. Studying the behaviors of youth and gathering enough research on them can help with creating or revising existing policy, as well as design new intervention strategies.

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<sup>i</sup> Overweight is defined as a BMI at or above the 85<sup>th</sup> percentile and below the 95<sup>th</sup> percentile for children and teens of the same age and sex. Obesity is defined as a BMI at or above the 95<sup>th</sup> percentile for children and teens of the same age and sex.

<http://www.cdc.gov/obesity/childhood/defining.html>

<sup>ii</sup> "The Challenge We Face." 2010.

[http://www.letsmove.gov/sites/letsmove.gov/files/TaskForce\\_on\\_Childhood\\_Obesity\\_May2010\\_FullReport.pdf](http://www.letsmove.gov/sites/letsmove.gov/files/TaskForce_on_Childhood_Obesity_May2010_FullReport.pdf)

<sup>iii</sup> "Are Nutrition Policies Making Teenagers Hungry?" 2016.

[http://www.hamiltonproject.org/papers/are\\_nutrition\\_policies\\_making\\_teenagers\\_hungry](http://www.hamiltonproject.org/papers/are_nutrition_policies_making_teenagers_hungry)