4-10-2015

Preventing Obesity: The Impact of Parental Involvement on Children's Nutritional Health

Kaitlyn Chiazza

Preventing Obesity: The Impact of Parental Involvement on Children's Nutritional Health

Kaitlyn Chiazza
Research Advisor: Dr. Sarah M. Estelle
Senior Research Project in Economics

Abstract

Child obesity rates have dramatically risen over the past years, tripling from 5% in the 1970s to 15% in the early 2000s (Anderson, Butcher, & Schanzenbach, 2007). The concern about this so-called epidemic has not escaped academic study. Economists have been especially interested in identifying the causes of obesity. Once the causes of obesity are identified, policy makers and families can make plans to improve child health. Some economic studies find parental involvement to be a strong influence on children's obesity because the parent is able to mediate factors in the home environment that relate to food-related activities. This research utilizes variables that reflect parental involvement from the Early Childhood Longitudinal Survey- Kindergarten to determine the relationship between parental involvement and children's nutritional health, including junk food consumption and obesity. Using a fixed effects model, this study finds that some parent activities in the household have an impact on child junk food purchase and consumption, but there is limited impact found on child BMI.

Introduction

Research question: What is the impact of parental involvement on child's nutritional health, including obesity and junk food consumption?

Addressing the problem begins with identifying the causes of obesity, which includes eating behaviors. Parent is able to control food-related activities of the child and mediate factors of the home environment that affect child's eating behaviors.

Previous Research

- Datar & Nicosia (2009) find junk food availability in school to be linked with children's junk food consumption, but suggest there is more involved in explaining a child's choice to consume foods.
- Wendt (2009) uses ECLS-K and find that mothers who work more hours positively effect child's likelihood of obesity, implying that a mother's availability in the household produces a significant impact on the child.

This study similarly assesses a parent's involvement in the home on child obesity, but looks at various independent variables to explain how a parent creates an impact on the child's obesity and junk food purchase and consumption.

Theory

Parental involvement
A. Family meals
B. Television rules

→ Child BMI
→ Child junk food purchase
→ Child food consumption

Parent's nutritional values
Family characteristics

1. How does parental involvement impact children?
   A. Family meals – role modeling effect
   B. Television rules – discipline
2. What influences parental involvement (confounding factors)?
   A. Parent's nutritional values and family characteristics may cause a parent to be more or less involved regarding food-related activities.
3. Parent's nutritional values and family characteristics also may produce effects on the child's BMI and the child's eating behavior.

Data

Early Childhood Longitudinal Survey-Kindergarten : Nationally representative survey of 21,000+ students, repeated K-8th grade. This study uses a sample of data consisting of the fifth grade and eighth grade years.

Summary Statistics

Variable (N = 14366)	Mean	Std. Dev.	Min	Max
Family eats breakfast together	.2432	.4290	0	1
Child eats breakfast regularly	.2776	.4478	0	1
Family eats dinner together	.4708	.4992	0	1
Child eats dinner regularly	.3546	.4784	0	1
Talk risks of smoking	.9031	.2958	0	1
Talk risks of alcohol	.8844	.3197	0	1
Talk risks of sex	.7636	.4249	0	1
Talk risks of drugs	.8633	.3436	0	1
TV rule – program	.8451	.3619	0	1
TV rule – time of day	.8573	.3498	0	1
TV rule – weekday hours	.5681	.4954	0	1
TV rule – week hours	.3745	.4840	0	1
Parent's self-reported health	.6078	.4883	0	1
Grade level – Eighth	.5	.5	0	1

Empirical Model

To evaluate the impact of various factors of parental involvement on child BMI, child junk food purchase and consumption, the following OLS model is used. To avoid bias due to endogeneity, an individual fixed effects model is used. The FE model uses observations from 5th and 8th grade to control for child-specific factors that are constant over time.

$$ChildBMI_i = \beta_0 + \beta'_1 FamilyMeals_i + \beta'_2 Discipline_i + \beta'_3 ParentHealthValue_i + \beta'_4 FamilyCharacteristics_i + \varepsilon_i$$

Empirical Results

OLS and Fixed Effects for BMI

(N = 14366)	BMI				Buy Sweets	Buy Salty	Buy Soda
	OLS	OLS w. Controls	FE	FE w. Controls	FE w. Controls	FE w. Controls	FE w. Controls
Family eats breakfast together	-.4998 (.1170)***	-.3332 (.1174)***	.0641 (.1059)	.0573 (.1057)	-.0105 (.0083)	.0062 (.0123)	.0029 (.0115)
Child eats breakfast regularly	-.2707 (.1130)**	-.2222 (.1125)**	-.0361 (.0971)	-.0358 (.0970)	-.0154 (.008)*	-.0013 (.0112)	.0034 (.0105)
Family eats dinner together	-.2707 (.1138)**	.2004 (.1137)*	.1124 (.1035)	.1374 (.1038)	-.0205 (.0081)**	-.0304 (.0120)**	-.0061 (.0112)
Child eats dinner regularly	.0297 (.1022)	-.0558 (.1190)	.0278 (.1024)	.0297 (.1022)	.0026 (.0085)	.0181 (.0119)	-.0184 (.0111)*
TV rule – program	.0058 (.1555)	.1422 (.1576)	-.1512 (.1400)	-.0868 (.1453)	.0182 (.0112)	-.0205 (.0168)	.0122 (.0157)
TV rule – time of day	-.1545 (.1619)	-.0325 (.1667)	-.1548 (.1377)	-.0922 (.1435)	.0006 (.0119)	.0025 (.0166)	.0322 (.0155)**
TV rule – weekday hours	-.0142 (.1259)	.0174 (.1253)	.1799 (.1082)*	.1932 (.1081)*	-.0037 (.0089)	.0026 (.0125)	-.0124 (.0117)
TV rule – week hours	-.0805 (.1227)	-.0839 (.1221)	.0768 (.1044)	.0844 (.1042)	.0023 (.0087)	0.0096 (.0121)	.0122 (.0113)
Parent self-reported health	-.9008 (.1000)***	-.6957 (.1020)***	.0193 (.1008)	.0355 (.1022)	.0204 (.0073)***	.0049 (.0115)	.0012 (.0012)
Talk health risks	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Low household income	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family structure	No	Yes	No	Yes	Yes	Yes	Yes
Parent demographics	No	Yes	No	Yes	Yes	Yes	Yes

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$

Conclusion

These results show that parent activities in the household have a limited impact on child BMI and on other child junk food purchase and consumption variables. There is potential for bias in these results. There are also limitations in the data, which prohibit obtaining specific information on the parent's health and food preparation by the parent.