

Determinants of Child Health Outcomes: A Cross Sectional Study of US Households

by

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Abstract

Using household level data from the national Survey of Children's Health (NSCH) 2003, the effects of socioeconomic, family, child and neighborhood characteristics on child health outcomes in the US are examined in this study. The child health outcomes studied here are overall health status of the child, parent's concern for child's behavior, socio-emotional difficulties faced by the child, incidence of asthma, ADD/ADHD and learning disability. Income of the child's household, age of the child and the gender are significant determinants of the health outcomes. Most of the child and family characteristics are also important predictors.

Chapter 1. Introduction

The primary aim of this paper is to provide a better understanding of the determinants child health in the United States. More specifically, using individual-level data from a nationally representative survey of children's health conducted in 2003, the following interrelated questions are addressed. How does relative income of households affect their children's health? Alternatively, is the relative income of household an independent predictor of child health? Is neighborhood safety a good predictor of child health? Does maternal health affect child health? How does breastfeeding or reading to a child affect his/her well-being? Are the benefits of breastfeeding greater in lower-income or less educated households? How does parental tobacco use determines child health and well-being? Is there a protective influence of religious services participation on children's health? Is there a relationship between child ADD/ADHD or learning disabilities and household income, mother's health and parents' education levels? This study attempts to find empirical evidence to help answer these critical questions.

A child's health is affected by individual and community level socioeconomic status (SES). Usually the more favorable these factors are the better the health of an individual. Case, et al. (2002) showed that household income and child's health have a positive relationship. Moreover, the health effects of income accumulate over time. Thus, the gap in the health status between children from higher and lower income families widen over time. Robert (1998) found that compared to community level SES, individual level SES affect health more strongly.

Relative Income Hypothesis (RIH) states that an individual's utility depends on the individual's wealth in relation to his/her peers. Luttmer (2005) looks at the relationship between an individual's self-reported happiness and his/her income relative to neighbors. He found that an increase in neighbor's income levels negatively affects an individual's happiness. Mangyo and Park (2008) test the Relative Deprivation Hypothesis for China. According to this hypothesis, "it is (the) social rank (of an individual) in a reference group that determines health, especially in rich countries where material conditions...are

mostly satisfied.” They found that relative standard of living is correlated with health. Thus, while income inequality represents the distributional aspect of wealth in a society, relative income can be considered as a measure of the social position of an individual. In this paper, we re-examine the RIH in the context of the determination of child health.

Mother’s health has been shown to have a positive effect on child’s health, through better quality care by healthy mothers and hygienic environments. However, parental or maternal health may serve as a proxy for income of the household since they are positively correlated. In this paper the effect of maternal health on child health is estimated using controls for income.

That neighborhood characteristics affect population health, has been widely researched and documented. Wilson’s theory of neighborhood decline emphasizes on affluence and residential stability for building informal social control among residents of a particular locality. And this social control in turn reduces potentially health compromising behavior like drug usage, tobacco use, gambling or prostitution. Browning and Cagney (2003) combined seven questions, from a household survey, indicating trust, safety and social cohesion to form a “scale of health related collective efficacy” and found that social support has a positive impact on health. According to Sampson, et al. (1997), residential stability and homeownership boosts informal social control. Moreover, “concentrated forms of disadvantage” like poverty or racial segregation diminishes collective efficacy. Collective efficacy can be thought of as “the linkage of mutual trust and the willingness to intervene for the common good” in a neighborhood. Thus, neighborhood safety can be thought of as an indicator of collective efficacy, consequently implying trust and informal social control among residents. In this, paper I test the hypothesis that neighborhood safety has a positive impact on child health outcomes.

Children’s health and personality development are also affected by family norms like religious activities or children’s participation in activities outside school. Varon and Riley (1999) showed that maternal church participation rates influences family functioning and health of adolescents in a positive

way. In this paper, a dummy for religious service attended by children at least once a week is used as a determinant for health outcomes.

Breastfeeding is associated with positive child health. Barrera (1991) found that the benefits of exclusive breastfeeding enjoyed by children differed with mothers' education levels. Children of less educated mothers enjoyed the greatest benefits of breastfeeding, compared to the relatively low benefits accruing to children of more educated mothers. Such a difference in benefits was attributed to substitutes of breast milk that a more educated or richer mother could afford. In this study, breastfeeding is used as one of the determinants of health outcomes of children below the age of 6.

Tobacco use by parents is known to have an adverse effect on child's health. Rivard, et al. (1999) found a significant relationship between mother's smoking and childhood asthma incidence. For the present analysis, the dataset was divided into two subsets based on age, and use tobacco use as a determinant of child's health.

Studies related to ADD/ADHD (Attention Deficit Disorder/Attention Deficit Hyperactive Disorder) have mostly looked at its economic impact, effect on child school attainment or employability in adult life. Currie and Stabile (2003) concludes that ADHD or mental health conditions, compared to physical health conditions, have larger negative effects on child's future human capital formation in the form of decreased adult earnings and employment. Fletcher and Wolfe (2008) found that siblings with ADHD prove to be detrimental to the educational outcomes of other children in a family. Pelham, et al. (2007) calculated the economic impact of ADD/ADHD in terms of the cost of illness. This study, explores the empirical relationship between ADD/ADHD and learning disability incidences of children and their socioeconomic, family, and neighborhood characteristics.

The remainder of the thesis is organized as follows. In section 2, I briefly discuss the relevant literature on some of the determinants of child health. Section 3, describes the data used. In Section 4, the results are presented and discussed. Section 5 presents conclusions.

Chapter 2. A brief literature review

Neighborhood is thought of as having an important influence on children. Growing up in an affluent neighborhood has much more positive effects on a child than growing up in disadvantaged ones. Bronfenbrenner (1989), considers neighborhood influences as a part of ecological models. According to these models, an individual's well being is being observed in the context of ecological systems of which he is a component. Extended family, peer, neighborhood, community, school and workplace are examples of such systems. Thus, since development of an individual occurs within these ecological systems, these models are based on the assumption that individuals have to be studied in the context of the multiple ecological systems that influence them. Most of developmental work has focused on family and peer group (Hartup, 1983; Maccoby and Martin, 1983), ignoring neighborhood contexts. Economists, using contextual models similar to ecological models used by developmental psychologists, have begun studying the influences of neighborhood. Jencks and Mayer (1990) develop a hierarchy structure of ways in which neighborhood affects child development: 1. 'contagion' theories, based on the power of peer influences to spread problem behavior, 2. 'collective socialization' theories based on the influence of neighborhood role models and monitoring on a child's socialization, 3. 'competition' theories, according to which neighbors compete for scarce neighborhood resources, and 4. 'relative deprivation' theories, similar to relative income hypothesis, in which individuals evaluate their standing in relation to their neighbors. While the first two theories predict a positive influence of affluent neighbors on children, the latter predict the opposite. As discussed before, in this paper neighborhood safety, an indicator of collective efficacy (Sampson, et al., 1997) is used as a determinant of child health.

Family plays the most important role in promoting the health and well being of a child. The mother can be considered the most important health worker since she plays the central role in activities pertaining to rearing children (Barrera 1991). A mother's performance of this task depends on her health, and therefore, maternal health can be thought of as having a positive influence on child health. As far as empirical findings are concerned, pediatric and psychiatric research has shown a positive association

between maternal health and child health. However, there are varied paths by which mother's health affect children. Case, et al. (2002) study the ways in which parental health contribute to children's health. According to them, the three possible channels through which children's health might be affected by parental health are: "an inherited susceptibility to different diseases, a less healthy uterine environment, and lower quality care by sick parents." Sample selection and bias, confounding factors, and limited assessment of family influences, are some of the methodological issues in this area of research. The methodology of most of the pediatric studies is inadequate because simple cross tabulations are used to draw conclusions. Moreover, these studies do not control for factors like income that are usually correlated with parental health.¹ Studies using multivariate regression often contain biased results because of omitted variables. Case, et al. (2002) did not have controls for income inequality, smoking, neighborhood features, and religious participation.

Family and cultural norms and activities influence the development of healthy youth (Nettles, et al., 1994; Rutter, 1981). Despite its critical influence, not many studies have investigated the relationship between family religious activities and children's health (including emotional health).

Varon and Riley (1999) analyzed the relationship between maternal church participation and adolescent mental health and social functioning, and concluded that youths with mothers participating in religious activities were more satisfied with their lives, more involved with their families, and had better skills in solving health-related problems compared with youths whose mothers had lower levels of participation in religious services. The present study differs from Varon and Riley (1999) since the relationship between mental health and religious participation is analyzed for children aged 3-17 instead of only adolescents, and the association between children's mental health and their religious participation, instead of the maternal religious participation, is explored; although it is recognized that the religious participation by parents is directly measured by religious participation of children.

¹ For an excellent review of pediatric literature on this topic, see the paper by Drotar (1994), *Journal of Pediatric Psychology*, Vol. 19, No.5, pp. 525-536.

Longitudinal studies of child and adolescent development have shown that infrequent church attendance and an unstable family pattern are related and are responsible for social problems like early sexual activity, teenage pregnancy, substance use and abuse, and delinquency among adolescents (Dryfoos, 1990). Oyemade and Washington (1990), found that in an urban population of African-American adolescents, the development of substance abuse was linked to low levels of church attendance by family members.

Numerous studies have documented the adverse effects of tobacco smoke on children. Strachan and Cook (1997) looked at the relationship between parental smoking to acute lower respiratory illness in the first three years of life of children. They concluded that this relationship was causal.

Rivard, et al. (1999) found a significant relationship between mother's smoking and childhood asthma incidence. However, the methodology of most of these medical and public health studies is inadequate because conclusions are drawn from simple cross tabulations. Important factors that might be correlated with parental smoking such as parental health or neighborhood characteristics are also not controlled for.

Chapter 3. Data

The 2003 National Survey of Children's Health (NSCH) data covering 50 states and the District of Columbia was used in this study. The NSCH survey was funded by the Maternal and Child Health Bureau, U.S. Department of Health and Human Services, while the National Center for Health Statistics of the Centers for Disease Control and Prevention administered the sampling and telephone interviews. An ongoing surveillance system, for monitoring state and national level health and well being of children, called SLAITS (State and Local Area Integrated Telephone Survey Program) was used to generate random telephone numbers to be included in the NSCH telephonic interview. Out of the 1.9 million telephone numbers randomly generated, non-residential households, households without working telephone numbers and households without children below the age of 18 were rejected from the sample. A child was randomly chosen by the interviewer to be the focus of the interview from each household identified. A parent or guardian that is knowledgeable about the health and well being of the child in question was chosen as the respondent.

Out of a total of 102,353 interviews that were completed, 79 percent had mothers as the respondent, 17 percent had fathers as the respondents, while 3 percent had grandparents as respondents. The number of interviews completed varied by states, from 1,483 in Utah and 1,848 in New Mexico to 2,241 in Louisiana and Ohio. There were 25 states including DC that had more than 2000 interviews completed.

An incentive scheme was introduced to get responses from those who did not respond initially. Households that gave initial hostile reactions and households that requested to be removed from the calling list were not included in the incentive scheme. With this system, the study's weighted interview completion rate increased from 60.7% to 68.8%, while the CASRO (Council of American Survey Research Organizations) response rate (or the overall response rate), which is the product of the resolution rate, the screener completion rate, and the interview completion rate increased from 48.8% to 55.3%. This rate varied by state, and ranged from 49.6% for New Jersey to 64.4% for South Dakota.

Sampling weights were assigned for each interview to produce population based estimates at the state level. These weights took into account the probability of selecting each household telephone number, after adjusting for households having multiple telephone lines, households without telephone lines and households that did not respond. The weights also took into account age, gender, race, ethnicity, household size, and educational attainment of the most educated household. This gave a more representative sample of households.

3.1 Child health outcomes

There are six child health outcome variables that are used in the present study. All except one variable- overall health status are binary taking a value of 1 or 0. Overall health status of the child is ordered in nature taking values from 1 (poor) to 5 (excellent). The other measures of health outcomes are: parent's concern for 0-5 year old kids (parents having at least one concern about their children's learning, behavior or disability), socio-emotional difficulties (children with moderate to severe difficulties in concentrating, getting along with others, and having normal behavior or emotional patterns), asthma (children affected by asthma), ADD/ADHD (children affected by Attention Deficit Disorder or Attention Deficit Hyperactivity Disorder) and learning disability (children diagnosed with learning disability).

3.2 Determinants of child health outcomes

All the models that are analyzed have child's age and gender as explanatory variables. In addition to these two variable, the following are the various categories of variables that have been included in the analysis:

Socioeconomic Status: In NSCH 2003 a direct measure of household income is not given. Instead household income as a percentage of the federal poverty line of the state of residence is given. This ratio is taken as a measure of household income for the present analysis. It is expected that health and well being of children would be positively related to income. In addition, relative income of a household is used to test the relative income hypothesis. Relative income is computed by dividing state average

household income by the household income of the household in question. Household income in turn is calculated by multiplying household income as percentage of poverty line by the federal poverty level of the state.

Child characteristics: The variables in this category describe the characteristics that describe the child in question. In order to ascertain the effects of health care on child's well being, a dummy for current health insurance status is used. Participation in activities outside school activities is also an indicator of a child's mental development. A dummy for outside school activities for children aged 6 years and older is used as a determinant of health status of children.

Child's family characteristics and values: The variables included in this category capture the effects of family functioning on health outcomes of children. Breastfeeding (dummy for children who were ever breastfed) and reading to child (the number of days a week a child is read to) for children less than 6 years of age, dummy for household tobacco use by parents, mother's health (on a scale of 1 to 5), dummy for single mother household, parent's education and religious participation by child are the variables representing family characteristics.

Child and family's neighborhood: Child's safety in a neighborhood is a measure of Collective Efficacy. A variable reflecting parent's perception of child's safety in the neighborhood is used as an indicator of supportive neighborhood. The race (Black and Hispanic) of the child is also included to look at community specific effects on child health outcomes.

Chapter 4. Empirical framework and findings

4.1 Framework

The dependent variables in the present study are binary or ordered in nature. In accordance with previous studies carried out in this field, binary logistic and ordered probit (for overall health status) models are used to analyze the relationship between health outcome variables and variables describing the child and his/her family. In all the models estimated, age of the child, dummy for male, income as percentage of federal poverty level and relative income are included. These regular variables represent some of the demographic characteristics of the child's family in question. While age, gender and income as percentage of poverty line are given in the dataset, relative income is calculated by taking the ratio of average state level household income and the household income of the family. For each of the health outcomes, y_i , the beginning point involved estimating the following model:

$$y_i = \beta_0 + \beta_1 Age_i + \beta_2 Male_i + \beta_3 YPL_i + \beta_4 Rel_Y_i + \varepsilon_i$$

In the next model, dummies for African American and Hispanic households were added to the regular variables. Next, in order to facilitate adding more variables, the dataset was divided into two on the basis of the age of child; children with age greater than or equal to 6 and children with ages 0-5 years. Child characteristics like activities outside school (for age greater than or equal to six), insurance, breastfeeding and number of days being read to by a parent (age 0-5) were included in the next set of models. Family characteristics like tobacco use by parents, single mother household, mother's health, weekly religious participation, education of parents, were the next set of variables to be added to the models, followed by safety of child in the neighborhood. With the inclusion of more variables, the number of observations used in the models decreased. While eight models each for overall health status of child, socio-emotional difficulties and asthma were estimated, five models each for parent's concern for child, ADD and learning disability were estimated. Table 1 gives the summary statistics for the variables used.

4.2 Empirical findings

Overall health status of the child: In order to gauge parent's perception of child's health, the question asked to the respondent was: "In general, how would you describe [CHILD]'s health?" The response obtained was on a scale of 1 through 5, with 1 indicating poor health status and 5 implying excellent. As was discussed earlier, I started by estimating the effect of regular variables on overall health status, and go on to estimate seven more models by adding additional set of variables each time. The number of observations decreased as the number of explanatory variables was increased; from 100,652 in models 1 and 2 to 19,653 in models 6 and 8. For children less than 6 years of age, adding variables representing family characteristics reduced the number of observations from 31,691 in model 4 to 19,653 in model 6. Such a reduction was due to the dummy for tobacco use by family. This variable had around 11,000 missing observations since it was introduced halfway through the survey. The regression results including the marginal effects when health status is excellent are given in table 2.

Age, dummy for male and income as percentage of poverty line are robust to different specifications. Relative income, on the other hand, has coefficients varying in signs and significance. Among the child characteristics, i.e., outside school activities, insurance coverage, breastfeeding and number of days being read to are all robust and have coefficients and marginal effects that exhibit expected signs. Among the set of variables describing family characteristics, coefficients corresponding to tobacco use by parents are either negative or not significant, single mother family also has a negative relationship with health status, while weekly religious services has coefficients that are either positive or not significant implying its positive relationship with health status. Dummies for high school and below high school education have negative coefficients. Neighborhood safety, used in models 7 and 8 are significant and show expected positive signs. In these models, it is also seen that dummies representing African American and Hispanic households are robust across all specifications. As was discussed earlier, overall health status is an ordered variable. Thus, each variable in a model has five marginal effects on the probability of overall health status taking values 1 to 5. Table 3 gives the marginal effects of the

explanatory variables used in model 7. Figure 1 is a graph of the marginal effects of income on the five levels of overall health. As expected, the marginal effects associated with lower levels of health are negative while that with excellent (5) health status is positive. Thus with rising income levels the probability of a child in excellent health status increases. Not all the marginal effects are significant. Excellent health status (5) and good (3) are significant. Figure 2 gives a graph of the probability of Overall Health taking a value of 5 and the corresponding income levels. The slope of the graph can be thought of as the marginal effect. This graph is calculated for a White male child of average age, residing in Arizona, participating in outside school activities and weekly religious services, having insurance, and belonging to a non-smoking two-parent family with post higher education levels. Relative income is held at the average level.

Parent's concern: In the survey, a question was asked to the parent or guardian of a child less than 6 years of age: "Do you have any concerns about [CHILD]'s learning, development, or behavior?" This was intended to capture the parent's anxiety or fear about her child's all round development. Since this question is confined only to parents/guardians of children less than 6 years of age, the number of observation and models used were less than those for overall health status. The response is binary in nature and logistic regression was used. Table 4 gives the regression results. As was the case for overall health status, I began by estimating the effect of the regular variables (age of the child, dummy for male, income as percentage of poverty line and relative income) on parent's concern and then subsequently estimated the effects of child characteristics, family characteristics, neighborhood safety and race on the same.

The regular variables representing the socioeconomic status and the demographic characteristics of the child's family are mostly robust across all specifications, and exhibit expected signs. Relative income however is not significant in any of the models. Among the child characteristics, insurance is significant (with a counter-intuitive result) only when all the factors are being controlled for, while

breastfeeding is significant when family characteristics and neighborhood safety are excluded from the models. Reading to a child is significant and consistent across the models. Among the family characteristics, all but the dummy for parents not attending high school are robust and have signs that are intuitive. In the last model, neighborhood safety is significant and shows a negative relationship with parent's concern. Among the ethnicity dummies, while Hispanic is significant and consistent across all the models, dummy for African American households is not significant in any of the models.

Socio-emotional difficulties: US children often face various emotional or behavioral problems that require attention. The present study, investigated the determinants of such problems faced by children. In the survey the following question was asked about child's problem: "Does [CHILD] have any kind of emotional, developmental, or behavioral problem for which [he/she] needs treatment or counseling?" Since the variable is binary in nature, logistic regression was used. Table 5 gives the regression results.

As for the other dependent variables, age of the child and gender are robust across all specifications. Income as percentage of poverty line and relative income have varying signs and significance levels. Among the child characteristics, outside school activity and breastfeeding have significant negative relationships with socio-emotional difficulties. Among the family characteristics, all but the dummy for below high school education for parents are significant and have expected signs. Neighborhood safety has a negative relationship with the dependent variable thus showing the importance of neighborhood safety in influencing child psychology.

Asthma: The survey also looked at some of the physical difficulties faced by the child. Among them incidence of asthma is particularly important. The question asked in the survey was: "Has a doctor or health professional ever told you that [CHILD] has ... asthma?" The variable is binary in nature. Logistic regression was used to look into the relationship between asthma incidence and various

socioeconomic, child, family and neighborhood characteristics. Table 6 gives the regression results. The pattern of regressions is the same as those in the earlier models: starting with the regular variables and subsequently adding other relevant explanatory variables.

Among the regular variables, while age and gender of the child are robust to various specifications, income as percent of poverty level and relative income are not robust. Income percentage becomes insignificant once family characteristics are introduced in the models. Two surprising results in these models are the positive relationship between asthma and outside school activity and insurance of the child. Breastfeeding is negatively related to asthma while reading to a child is positively related. Among the family characteristics, tobacco use by parents, as expected, and single mother household have significant positive relationships with asthma, while mother's health is related negatively. Religion and education level of parents are not robust. Among the dummies for ethnicity, African Americans have greater incidence of asthma than Hispanics.

Attention Deficit Disorder/Attention Deficit Hyperactive Disorder: ADD/ADHD, although low in prevalence, is often a concern for parents. The present analysis studied the relationships between this disorder and various demographic and socio-economic characteristics. Since ADD/ADHD is mostly prevalent in school going children, only those children who are greater than 5 years of age were considered. Table 7 gives the logistic regression results. Age, gender and income as percentage of poverty level are robust to various specifications. Among the child characteristics insurance is positively related to ADD, this might be because insurance to some extent is a reflection of the standard of living of the family, and higher the income or standard of living of a family the more likely that ADD would be diagnosed. All family characteristics except less than high school education for parents is significant across all five models. As far as ethnicity dummies are concerned, both African American and Hispanic households are negatively related to ADD.

Learning Disability: To look at the relationships between socio-economic status of child's family, child characteristics, family characteristics and neighborhood effects with learning disability of the child an analysis similar to that done for ADD was undertaken, the results of which are given in table 8. As with other dependent variables, age, gender and income as percentage of poverty line are robust across different specifications. Outside school activity is significantly negatively related to learning disability thus stressing the importance of socializing. Among the family characteristics, religious participation is negatively related while others are mostly significant exhibiting expected signs. Neighborhood safety, as was the case for ADD, shows a negative relationship with learning disability, while both African American and Hispanic households have lower chances of having children with such disability.

Chapter 5. Conclusion

In the present study it is seen that income, age and gender associated with the child are significant predictors of health outcomes. Relative income is not significant in most of the models. Among the child characteristics, outside school activity, insurance of the child, breastfeeding and reading to the child are significant and have expected signs in most of the models. Tobacco use by parents and mother's health are significant determinants of health outcomes especially asthma and child's socio-emotional difficulties. The family status and education received by parents are important determinants of health. While single mother households usually have children that are worse off in health than other households, parents with higher education are better health care providers than those who have lower levels of education. Religious service has significant positive impact on child's emotional and mental health. For most of the health outcomes, neighborhood safety positively impacts child's well being. Ethnicity is not a very powerful predictor of health outcomes. The study used logistic and ordered probit models for estimation. Since various measures of health outcome used in this study are interrelated, it is possible that error terms from the logit and ordered probit models might be correlated. A systems estimator, such as a seemingly unrelated regression, as opposed to single equation methods used in the study, might give more efficient estimates. Further research in this area may focus on this issue.

References

- Barrera, A. "The Interactive Effects of Mother's Schooling and Unsupplemented Breastfeeding on Child Health." *Journal of Development Economics* 34(1991):81-98.
- Brofenbrenner, U. "Ecological Systems Theory." In *Annals of Child Development-Six Theories of Child Development: Revised Formulations and Current Issues*, ed., Ross Vasta, pp. 187-251 Greenwich, CT: JAI Press, 1989.
- Browning, C.R., and K. A. Cagney. "Moving Beyond Poverty: Neighborhood Structure, Social Processes, and Health." *Journal of Health and Social Behavior* 44, no. 4 (2003):552-571.
- Case, A., D. Lubotsky, and C. Paxton. "Economic Status and Health in Childhood: The Origins of the Gradient." *The American Economic Review* 92, no. 5 (2002):1308-1334.
- Currie, J., and M. Stabile. "Socioeconomic Status and Child Health: Why is the relationship Stronger for Older Children." *The American Economic Review* 93, no. 5 (2003):1813-1823.
- Drotar, D. "Impact of Parental Health Problems on Children: Concepts, Methods, and Unanswered Questions." *Journal of Pediatric Psychology* 19, no. 5 (1994):525-536.
- Dryfoos, J. *Adolescents at Risk*. New York: Oxford University Press, 1990.
- Hartup, W.W. "Peer Relations." In *Handbook of Child Psychology, 4th edition, Volume IV: Socialization, Personality, and Social Development*, eds., Paul H. Mussen and E. Mavis Hetherington, pp. 103-196. New York: Wiley, 1983.
- Fletcher, J. and B. Wolfe. "Child Mental Health and Human Capital Accumulation: The Case of ADHD Revisited." *Journal of Health Economics* 27, no. 3 (2008):794-800.
- Jencks, C. and S.E. Mayer., "The Social Consequences of Growing Up in a Poor Neighborhood." In *Inner-City Poverty in the United States*, eds., L.E. Lynn Jr. and M.G.H McGeary, pp. 111-186. Washington, D.C.: National Academy, 1990.
- Luttmer, E. P. "Neighbors as Negatives: Relative Earnings and Well-Being." *Quarterly Journal of Economics* 120, no. 3 (August 2005):963-1002.
- Maccoby, E. E., & J.A.Martin. "Socialization in the Context of the Family: Parent-Child Interaction." In *Handbook of Child Psychology, 4th edition, Volume IV: Socialization, Personality, and Social Development*, eds., Paul H. Mussen and E. Mavis Hetherington, pp. 1-101. New York: Wiley, 1983.
- Mangyo, E. and A.Park. "Relative Inequality and Health in China: Which Reference Groups Matter?" Working Paper. Department of Economics, University of Oxford, 2006.

- Nettles, S. M. and J. H. Pleck. "Risk, Resilience, and Development: The Multiple Ecologies of Black Adolescents in the United States." *In Stress, Risk, and Resilience in Children and Adolescents: Processes, Mechanisms, and Interventions*, eds., R. J. Haggerty, N. Garnezy, M. Rutter, and L. R. Sherrods, pp. 147-181, London: Cambridge University Press, 1996.
- Oyemade, U.J. and V. Washington., "The Role of Family Factors in the Primary Prevention of Substance Abuse among high-risk black youth." *In Ethnic Issues in Adolescent Mental Health*, ed., A. R. Stiffman and L. E. Davis, Newbury Park, California: Sage, 1990.
- Pelham, W. E., E.M. Foster, and J. A. Robb., "The Economic Impact of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents." *Journal of Pediatric Psychology*, Vol. 32, No. 6(2007):711-727.
- Rivard, I. C., D. Gautrin, J. Malo, and S. Suissa. "Maternal Smoking and Childhood Asthma." *American Journal of Epidemiology* 150, no. 5 (1999):528-531.
- Robert, S. A. "Community-Level Socioeconomic Status Effects on Adult Health." *Journal of Health and Social Behavior* 39 (1998):18-37.
- Robert, S. A. "Socioeconomic Position and Health: The Independent Contribution of Community Socioeconomic Context." *Annual Review of Sociology* 25 (1999):489-516.
- Rutter, M. "Stress, Coping, and Development: Some Issues and Questions." *Journal of Child Psychology and Psychiatry* 22 (1981):323-356.
- Sampson, R. J., S. W. Raudenbush, and R. Earls. "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy." *Science* 227(1997):918-23.
- Strachan, D. P. and D. G. Cook. "Parental Smoking and Lower Respiratory Illness in Infancy and Early Childhood." *Thorax* 52 (1997):905-914.
- Varon, S. R., and A. W. Riley. "Relationship between Maternal Church Attendance and Adolescent Mental Health and Social Functioning." *Psychiatric Services* 50, no. 6 (1999):799-805.

Appendix

Table 1. Descriptive Statistics

Variable	Label	Mean	Minimum	Maximum	N
overall_health	In general, how would you describe child's health? Would you say [his/her] health is excellent, very good, good, fair, or poor?	4.48	1	5	100652
parn_con	Do you have any concerns about child's learning, development, or behavior?	0.055	0	1	31691
Difficulty	Does child have any kind of emotional, developmental, or behavioral problem for which [he/she] needs treatment or counseling?	0.062	0	1	100652
Asthma	Has a doctor or health professional ever told you that child has asthma?	0.11	0	1	100652
ADD	Whether the child has ADD/ADHD	0.081	0	1	77,358
Learning disability	Whether the child has learning disability	0.101	0	1	77,358
AGE	Derived. Age in years of selected child	8.78	0	17	100652
Male	Is child male?	0.51	0	1	100652
Y % PL	Derived. Poverty level of this household based on DHHS guidelines	5.66	1	8	100652
Relative Income	State average household income divided by household income of the family in question	1.76	0.411	11.727	100652
black	Whether child is African American	0.099	0	1	100652
hispanic	Is child of Hispanic or Latino origin?	0.13	0	1	100652
Activity	During the past 12 months, did [he/she] participate in any clubs or organizations after school or on weekends, such as Scouts, a religious group, or [Boy/Girl]'s Club?	0.56	0	1	67381
Insurance	Does child have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicaid?	0.91	0	1	67381
tobacco	Does anyone in the household use cigarettes, cigars, or pipe tobacco?	0.31	0	1	67381
Single mom	Whether the child belongs to a single parent family	0.21	0	1	67381
Mom health	Child's mother's health	3.89	1	5	67381
Religion	Whether the child is taken to the church or other places of worship by parents at least once a week	0.55	0	1	67381
High school	Highest education level of parents is high school	0.20	0	1	67381
Primary school	Highest education level of parents is below high school	0.04	0	1	67381
Neigh safety	How often do you feel child is safe in your community or neighborhood? Would you say never, sometimes, usually, or always?	3.37	1	4	67381
breastfed	Was child ever breastfed or fed breast milk?	0.73	0	1	31691
Read	During the past week, how many days did you or other family members read stories to child?	5.08	0	7	31691

Table 2. Overall health status of the child

Variable Classification	Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Intercept	2.529* (0.0426)	2.677* (0.0429)	2.431* (0.054)	2.61* (0.086)	1.604* (0.059)	1.659* (0.121)	1.28* (0.0627)	1.411* (0.126)
Base Variables	Age	-0.0186* (0.0007)	-0.02* (0.0007)	-0.018* (0.0013)	-0.047* (0.0041)	-0.01* (0.0013)	-0.033* (0.0054)	-0.011* (0.0013)	-0.03* (0.0054)
	Male	-0.053* (0.0076)	-0.054* (0.0076)	-0.012 (0.0093)	-0.111* (0.014)	-0.021* (0.0094)	-0.115* (0.018)	-0.028* (0.0094)	-0.117* (0.018)
	Y	0.117* (0.0031)	0.105* (0.0031)	0.11* (0.0038)	0.068* (0.0057)	0.062* (0.0041)	0.022* (0.0078)	0.061* (0.0041)	0.02* (0.0078)
	Relative Income	-0.0016 (0.0039)	0.0086* (0.0039)	0.01* (0.0048)	-0.004 (0.0069)	0.0052 (0.0049)	-0.0044 (0.0091)	0.0069 (0.0049)	-0.005 (0.0091)
Child Characteristics	Activity			0.148* (0.0096)		0.091* (0.01)		0.09* (0.01)	
	Insurance			0.115* (0.016)	0.086* (0.023)	0.0716* (0.0169)	0.098* (0.036)	0.07* (0.0169)	0.102* (0.036)
	Breastfed				0.099* (0.016)		0.047* (0.021)		0.0525* (0.021)
	Read to				0.035* (0.003)		0.025* (0.004)		0.024* (0.004)
Family Characteristics	Tobacco parent					-0.0365* (0.01)	0.0161 (0.021)	0.-0.036* (0.01)	0.014 (0.021)
	Single mom					-0.0093 (0.011)	-0.055* (0.024)	0.00056 (0.011)	-0.048* (0.024)
	Mom health					0.326* (0.005)	0.338* (0.01)	0.316* (0.005)	0.332* (0.0102)
	Religion					0.023* (0.01)	-0.0127 (0.019)	0.023* (0.01)	-0.0143 (0.019)
	High school					-0.135* (0.012)	-0.078* (0.024)	-0.136* (0.012)	-0.076* (0.024)
	Primary school					-0.397* (0.023)	-0.448* (0.042)	-0.393* (0.023)	-0.448* (0.042)
Neighborhood Characteristics	Neigh safety							0.112* (0.0064)	0.082* (0.011)
Race	Black		-0.216* (0.0133)	-0.254* (0.016)	-0.086* (0.025)	-0.231* (0.0164)	-0.077* (0.033)	-0.206* (0.016)	-0.06** (0.033)
	Hispanic		-0.445* (0.0119)	-0.393* (0.0155)	-0.417* (0.0206)	-0.301* (0.0162)	-0.28* (0.028)	-0.29* (0.0162)	-0.271* (0.028)
	Limit_2	0.818* (0.0188)	0.826* (0.0189)	0.79* (0.021)	0.929* (0.0439)	0.827* (0.022)	0.921* (0.053)	0.829* (0.022)	0.924* (0.053)
	Limit_3	1.714* (0.019)	1.737* (0.02)	1.717* (0.022)	1.83* (0.0456)	1.81* (0.023)	1.882* (0.056)	1.815* (0.023)	1.887* (0.056)
	Limit_4	2.538* (0.02)	2.571* (0.02)	2.567* (0.023)	2.654* (0.0459)	2.707* (0.024)	2.741* (0.0566)	2.715* (0.024)	2.747* (0.056)
	State dummies included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	N	100,652	100,652	67,381	31,691	67,381	19,653	67,381	19,653
	Log likelihood	-93100	-92353	-63175	-26995	-60743	-16013	-60590	-15987

Table 3: Marginal effects for variables on the probability of overall health =1,2,3,4 or 5 in model 7

Model 7 Marginal effects					
Marginal effects	ME (Y=1)	ME (Y=2)	ME (Y=3)	ME (Y=4)	ME (Y=5)
Marginal effect of AGEYR_CHILD	0.000113723	0.000474326	0.001622	0.001758	-0.00397
Marginal effect of Male	0.00027378	0.0011419	0.003905	0.004233	-0.00955
Marginal effect of Y % poverty level	-0.000595058	-0.0024819	-0.00849	-0.0092	0.020764
Marginal effect of relative income	-0.000067165	-0.000280139	-0.00096	-0.00104	0.002344
Marginal effect of outside school activity	-0.000880616	-0.003673	-0.01256	-0.01361	0.030728
Marginal effect of child insurance	-0.000682737	-0.0028476	-0.00974	-0.01056	0.023823
Marginal effect of tobacco use by parents	0.000348802	0.0014548	0.004975	0.005392	-0.01217
Marginal effect of single mother household	-5.49E-06	-0.000022885	-7.8E-05	-8.5E-05	0.000191
Marginal effect of mother's health	-0.0030689	-0.0128	-0.04377	-0.04744	0.107084
Marginal effect of weekly religious participation	-0.000227465	-0.000948733	-0.00324	-0.00352	0.007937
Marginal effect of high school education of parents	0.0013187	0.0055003	0.018809	0.020388	-0.04602
Marginal effect of below high school education of parents	0.0038143	0.0159092	0.054402	0.058969	-0.1331
Marginal effect of neighborhood safety	-0.0010879	-0.0045377	-0.01552	-0.01682	0.037962
Marginal effect of African American household	0.0019992	0.0083384	0.028514	0.030907	-0.06976
Marginal effect of Hispanic household	0.0028158	-0.0982531	0.040161	0.043532	-0.098

Figure 1: Marginal effects of income

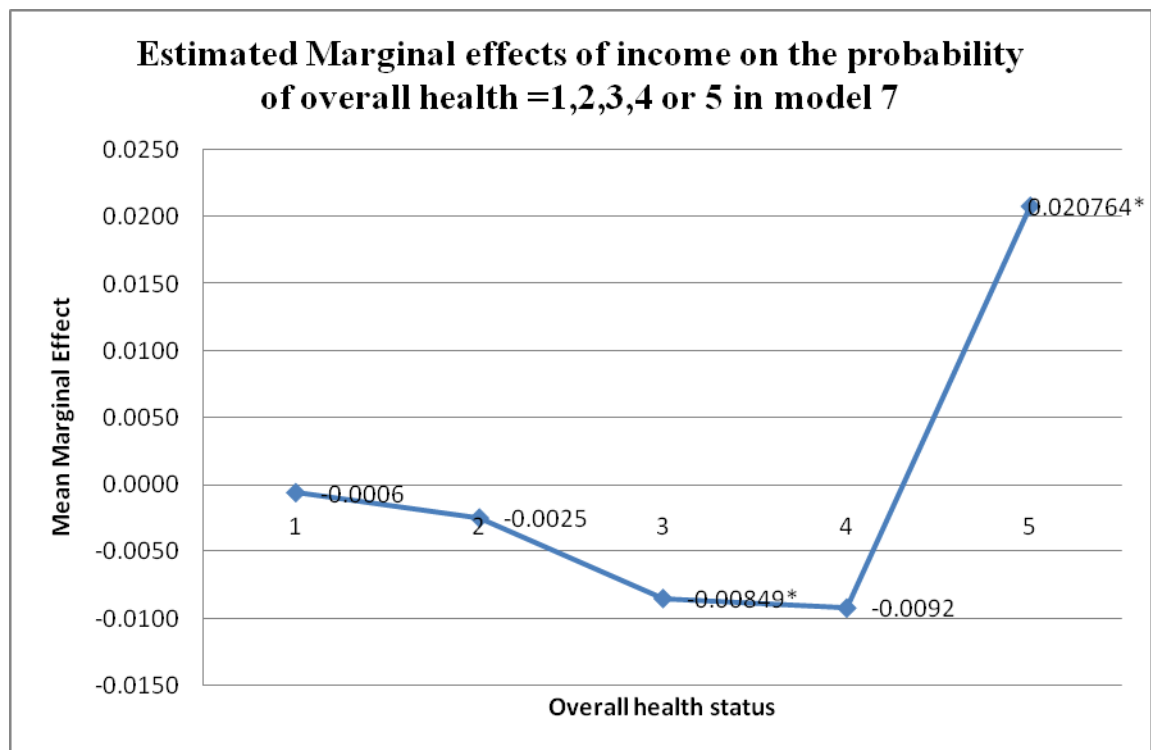


Figure 2: Graph of Probability (Overall Health=5) and Income Levels in Model 7

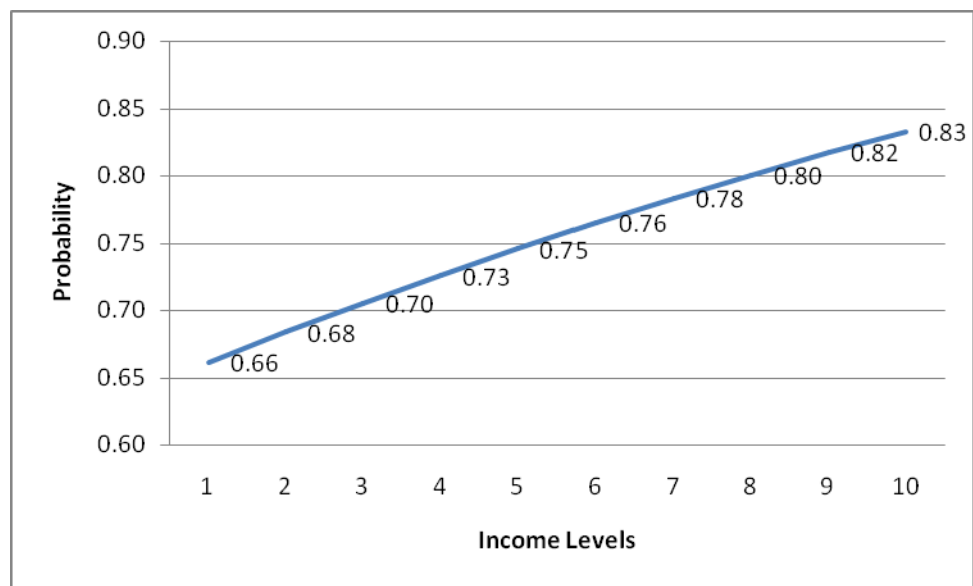


Table 4. Parent's concern for child

Variable Classification	Variables	Model 1	Model 2	Model 3	Model 4	Model 5
	Intercept	-3.495* (0.264)	-3.549* (0.265)	-3.236* (0.28)	-2.09* (0.394)	-1.302* (0.408)
Base Variables	Age	0.224* (0.0149) [0.0115]	0.224* (0.0149) [0.0115]	0.228* (0.0149) [0.011]	0.215* (0.019) [0.011]	0.208* (0.019) [0.01]
	Male	0.525* (0.051) [0.027]	0.525* (0.051) [0.0269]	0.518* (0.051) [0.0266]	0.557* (0.0652) [0.0286]	0.564* (0.065) [0.0289]
	Y	-0.114* (0.019) [-0.0058]	-0.107* (0.198) [-0.0055]	-0.098* (0.02) [-0.005]	-0.0369 (0.026) [-0.0019]	-0.028 (0.026) [-0.0014]
	Relative Income	0.0082 (0.0229) [0.00042]	0.0039 (0.022) [0.0002]	0.0036 (0.022) [0.00018]	0.0157 (0.029) [0.00081]	0.017 (0.029) [0.00088]
Child Characteristics	Insurance			0.0428 (0.077) [0.0021]	0.191 (0.129) [0.0098]	0.188* (0.13) [0.0096]
	Breastfed			-0.149* (0.055) [-0.0076]	-0.0981 (0.071) [-0.005]	-0.108 (0.071) [-0.0055]
	Read to			-0.0527* (0.01) [-0.0027]	-0.042* (0.013) [-0.0021]	-0.038* (0.014) [-0.0019]
Family Characteristics	Tobacco parent				0.192* (0.071) [0.0098]	0.2* (0.071) [0.01]
	Single mom				0.216* (0.079) [0.011]	0.195* (0.0796) [0.0099]
	Mom health				-0.4* (0.032) [-0.02]	-0.381* (0.0329) [-0.0195]
	Religion				-0.238* (0.066) [-0.012]	-0.233* (0.067) [-0.011]
	High school				-0.173* (0.084) [-0.0089]	-0.181* (0.084) [-0.0092]
	Primary school				-0.107 (0.136) [-0.0055]	-0.119 (0.137) [-0.0061]
Neighborhood Characterisitics	Neigh safety					-0.268* (0.0365) [-0.013]
Race	Black		0.124 (0.085) [0.0064]	0.065 (0.085) [0.0033]	0.101 (0.11) [0.0052]	0.043 (0.11) [0.0022]
	Hispanic		0.202* (0.069) [0.0104]	0.151* (0.071) [0.0077]	0.212* (0.093) [0.0109]	0.172** (0.094) [0.0088]
	State dummies included	Yes	Yes	Yes	Yes	Yes
	N	31,691	31,691	31,691	19,653	19,653
	Log likelihood	-6517	-6513	-6419	-3983	-3957

Table Continued on next page

Table 5. Socio-emotional difficulties (Continued)

Neighborhood Characteristics	Neigh safety							-0.215* (0.018) [-0.0154]	-0.14* (0.0627) [-0.0026]
Race	Black		-0.095* (0.047) [-0.0054]	-0.138* (0.05) [- 0.01]	0.017 (0.142) [0.00033]	-0.192* (0.052) [-0.0138]	-0.197 (0.193) [- 0.0037]	-0.252* (0.0525) [-0.0181]	-0.227 (0.194) [-0.0043]
	Hispanic		-0.212* (0.044) [-0.012]	-0.177* (0.049) [-0.013]	-0.29* (0.128) [- 0.0056]	-0.177* (0.051) [-0.0128]	-0.268 (0.173) [- 0.0051]	-0.206* (0.051) [-0.0148]	-0.288* * (0.173) [-0.0054]
	State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	N	100,652	100,652	67,381	31,691	67,381	19,653	67,381	19,653
	Log likelihood	-22306	-22294	-18514	-2910	-17963	-1736	-17899	-1734

Table 6. Asthma

Variable Classification	Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Intercept	-2.89* (0.105)	-2.931* (0.105)	-2.833* (0.128)	-4.03* (0.27)	-2.163* (0.139)	-4.058* (0.408)	-1.883* (0.146)	-4.058* (0.421)
Base Variables	Age	0.0628* (0.0019) [0.0064]	0.062* (0.0019) [0.0063]	0.0269* (0.0032) [0.0032]	0.275* (0.0135) [0.018]	0.0211* (0.0032) [0.0025]	0.258* (0.017) [0.0168]	0.021* (0.0033) [0.0025]	0.258* (0.017) [0.016]
	Male	0.335* (0.0198) [0.0345]	0.337* (0.0198) [0.034]	0.29* (0.022) [0.034]	0.556* (0.045) [0.0367]	0.297* (0.022) [0.0353]	0.603* (0.0578) [0.0393]	0.304* (0.022) [0.036]	0.603* (0.057) [0.0393]
	Y	-0.047* (0.0079) [-0.0049]	-0.039* (0.008) [-0.004]	-0.033* (0.0093) [-0.0039]	-0.104* (0.017) [-0.0068]	0.0016 (0.0098) [0.00019]	-0.262 (0.023) [-0.0017]	0.0031 (0.0098) [0.00037]	-0.026 (0.023) [-0.0017]
	Relative Income	0.01 (0.01) [0.001]	0.0124 (0.01) [0.00127]	0.0147 (0.011) [0.0017]	-0.0177 (0.02) [-0.0017]	0.027* (0.012) [0.0032]	0.0012 (0.027) [0.000078]	0.026* (0.012) [0.0031]	0.0012 (0.027) [0.000078]
Child Characteristics	Activity			0.04** (0.023) [0.0048]		0.059* (0.024) [0.007]		0.06* (0.024) [0.0071]	
	Insurance			0.412* (0.0473) [0.0492]	0.284* (0.0615) [0.0187]	0.415* (0.0475) [0.0491]	0.428* (0.131) [0.027]	0.416* (0.047) [0.049]	0.428* (0.131) [0.027]
	Breastfed				-0.242* (0.0484) [-0.016]		-0.149* (0.062) [-0.0097]		-0.149* (0.063) [-0.0097]
	Read to				0.0515* (0.01) [0.0034]		0.072* (0.0134) [0.0046]		0.072* (0.013) [0.0046]
Family Characteristics	Tobacco parent					0.0679* (0.025) [0.008]	0.169* (0.063) [0.011]	0.0675* (0.025) [0.0079]	0.169* (0.063) [0.011]
	Single mom					0.13* (0.0281) [0.0154]	0.305* (0.07) [0.019]	0.122* (0.028) [0.0145]	0.305* (0.07) [0.019]
	Mom health					-0.22* (0.011) [-0.0263]	-0.253* (0.029) [-0.0165]	-0.213* (0.011) [-0.0253]	-0.253* (0.029) [-0.016]
	Religion					-0.011 (0.024) [-0.0013]	0.079 (0.0588) [0.0052]	-0.01 (0.024) [-0.0013]	0.079 (0.058) [0.0052]
	High school					-0.058* (0.029) [-0.0069]	0.224* (0.072) [0.014]	-0.059* (0.029) [-0.007]	0.224* (0.072) [0.0146]
	Primary school					-0.303* (0.065) [-0.0359]	0.0689 (0.135) [0.0044]	-0.309* (0.065) [-0.036]	0.068 (0.135) [0.0044]
Table continued on next page									

Table 6. Asthma (Continued)

Neighborhood Characteristics	Neigh safety							-0.095* (0.015) [-0.011]	-0.00017 (0.0349) [-0.000011]
Race	Black		0.471* (0.0316) [0.0484]	0.397* (0.036) [0.0474]	0.704* (0.066) [0.0464]	0.353* (0.0374) [0.0419]	0.533* (0.087) [0.0347]	0.331* (0.037) [0.039]	0.533* (0.088) [0.034]
	Hispanic		-0.128* (0.033) [-0.0131]	-0.102* (0.0398) [-0.0122]	0.0088 (0.067) [0.00058]	-0.095* (0.04) [-0.011]	-0.024 (0.089) [-0.0016]	-0.105* (0.04) [-0.012]	-0.025 (0.089) [-0.0016]
	State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	N	100,652	100,652	67,381	31,691	67,381	19,653	67,381	19,653
	Log likelihood	-35858	-35736	-26955	-7826	-26737	-4779	-26718	-4779

Table 7. ADD/ADHD (Continued)

	State dummies	Yes	Yes	Yes	Yes	Yes
	N	77,358	77,358	67,394	67,394	67,394
	Log likelihood	-20580	-20478	-19606	-19311	-19288

Table 8. Learning disability

Variable Classification	Variables	Model 1	Model 2	Model 3	Model 4	Model 5
	Intercept	-2.828* (0.12)	-2.8* (0.12)	-2.365* (0.128)	-1.814* (0.141)	-1.553* (0.149)
Base Variables	Age	0.1* (0.0031) [0.0089]	0.101* (0.0031) [0.0088]	0.072* (0.0036) [0.0069]	0.0638* (0.0037) [0.0061]	0.0646* (0.0037) [0.0061]
	Male	0.603* (0.025) [0.053]	0.603* (0.025) [0.052]	0.583* (0.0257) [0.056]	0.594* (0.0258) [0.0568]	0.599* (0.0259) [0.057]
	Y	-0.141* (0.0096) [0.0124] [-]	-0.144* (0.0097) [0.0127] [-]	-0.137* (0.01) [-0.013]	-0.084* (0.01) [-0.008]	-0.083* (0.01) [-0.0079]
	Relative Income	-0.0142 (0.011) [0.0012] [-]	-0.011 (0.011) [-0.00097]	-0.0123 (0.012) [0.0011] [-]	-0.004 (0.012) [-0.00038]	-0.0053 (0.0124) [0.0005] [-]
Child Characteristics	Activity			-0.24* (0.024) [-0.023]	-0.155* (0.0259) [-0.0149]	-0.155* (0.0259) [-0.014]
	Insurance			0.089* (0.032) [0.0086]	0.108* (0.0325) [0.01]	0.109* (0.0325) [0.01]
Family Characteristics	Tobacco parent				0.215* (0.027) [0.02]	0.214* (0.027) [0.02]
	Single mom				0.0856* (0.03) [0.0081]	0.077* (0.03) [0.0074]
	Mom health				-0.233* (0.012) [0.022] [-]	-0.225* (0.012) [0.021] [-]
	Religion				-0.105* (0.0269) [0.01] [-]	-0.105* (0.026) [0.01] [-]
	High school				0.088* (0.0315) [0.0084]	0.088* (0.0315) [0.0084]
	Primary school				0.308* (0.059) [0.029]	0.304* (0.059) [0.029]
Neighborhood Characteristics	Neigh safety					-0.0876* (0.0165) [-0.0083]
Race	Black		-0.097* (0.043) [0.0085] [-]	-0.125* (0.0446) [0.012] [-]	-0.133* (0.0454) [0.012] [-]	-0.155* (0.045) [0.014] [-]

	Hispanic		-0.112* (0.041) [-0.0098]	-0.126* (0.042) [-0.0122]	-0.176* (0.044) [-0.016]	-0.186* (0.044) [-0.017]
	State dummies	Yes	Yes	Yes	Yes	Yes
	N	77,358	77,358	67,394	67,394	67,394
	Log likelihood	-24110	-24104	-22741	-22473	-22459