

Parenting Style and Child Happiness: Evidence from Japan

Yuko Nozaki, Institute for Future Engineering; Katsumi Matsuura, Hiroshima University, Japan

ABSTRACT

Raising happy children is the ultimate goal for parents. What makes children happy? In this paper, we examine how early-life risks, which refer to various factors outside the control of the child, influence child happiness, and what factors override these risks by analyzing the longitudinal Survey of Newborns in the 21st Century in Japan. Extreme parenting styles have adverse effects on the emotionally healthy development of young children. Conversely, maternal labor supply improves it. The empirical results show that valuing opportunities for interaction with both friends and parents can mitigate these early-life risks.

Keywords: child happiness, economic model of parenting, socio-economic status (SES) JEL Classification: J13, I31, I14

INTRODUCTION

A widening gap among children has become a central issue in social policy on poverty reduction. There are several factors to be considered in these circumstances. Widening economic inequality, a rising tide of working parents, and raising children in poverty are all indicators of the urgent need for action to reduce inequities through thoughtful public spending and public policy (HM Treasury, 2010). Moreover, towards a global knowledge-based society, a well-educated labor force is required. Investments in education and care available to all are fundamental for the availability of skilled workers and ensuring that increasing prosperity is equitably shared by society (Heckman, 2006; Cunha and Heckman, 2009). Thus, the apparent gap among children has become a central issue in social policy on poverty reduction (Duncan and Brooks-Gunn, 1997; Bradshaw, 2002; Ermisch et al., 2001).

The emphasis on a child's development had focused on addressing lifetime success that is defined by the family's SES (Socio-Economic Status) that is indexed as a combination of parental education, occupation, and family income (Todd and Walpin, 2003, 2007). Earlier studies had attempted to clarify the association between these material and financial factors and cognitive skills represented by test scores (Sirin, 2005) and a number of studies found a positive correlation between these two factors. More recently, numerous studies, including Economics, Psychology, Sociology, Neuroscience, and Psychiatry, have been conducted, which focus on the interaction between child development and 'non-cognitive skills.' These studies have been motivated by the series of Heckman's studies on early childhood intervention targeting non-cognitive skills, which

can refer to broader characteristics such as motivation, social competence, perseverance, etc. (Heckman et al., 2006; Cunha and Heckman, 2008; Cunha et al., 2010). Non-cognitive skills are increasingly considered to be vital in child development, and the majority of these studies reported an association between investing in the development of non-cognitive factors and future success. (Bowles and Gintis, 2002; Lleras, 2008)

It is noteworthy that the emphasis on children's development for both cognitive and non-cognitive skills has been defined by SES (Anger and Schnitzler, 2016). However, despite accumulating evidence showing the correlation between SES and child outcomes, quantitative results seem less clear (Denissen et al., 2007). One explanation for the lack of clear quantitative results seems to be owing to the deficiency of serious attention given to more non-financial aspects such as parenting style, the frequency of parent-child interactions. Another likely explanation for the problem is how we define child outcomes. As Layard (2013) discussed, a child's happiness is one of the most important indexes of child outcomes since it predicts their future success. In economics, qualitative factors generally do not carry as much weight in analyses; however, should more quantitative analytical methods be applied to these factors, a clearer image of the link can be developed.

Regarding parenting style, we should note that child poverty is different from life-course poverty, as it is transmitted from generation to generation (intra-generational poverty) through family culture. Although child poverty could be relieved partially by public domains such as reduced taxation and social welfare, these difficulties leave room for discussion in private domains. While low SES and physical disadvantages at birth and early childhood are outside the locus of control for children themselves, there is ample evidence that the contribution of parenting behaviors can help alleviate many of the early-life risks associated with such factors (Gutman et al., 2009).

Although a large number of studies have illuminated links between quantitative factors such as family income and parental education, few types of research have examined how more quantitative, proximal family factors of parenting style affect child well-being. In this paper, parent-reported children's school satisfaction was used as the defining indicator of child happiness, and the effect of early-life risks and parenting style on child happiness with respect to the issues mentioned above were examined. The rest of this paper is organized as follows: the

data and description of variables are presented in the Methodology section, a review of the estimation results follows, and the last section concludes the paper.

METHODOLOGY

Data

The data on which the analyses are based are from the Longitudinal Survey of Newborns in the 21st century (the 21st baby survey), which comprises fifteen waves from 2001 to 2016. The data follows infants born between January 10 and 17, 2001 and between July 10 and 17, 2001, and was conducted by the Ministry of Health, Labor and Welfare in Japan. The first survey was of 6-month-old infants carried out in August 2001 for babies born between January 10 and 17, 2001 and February 2002 for babies born between July 10 and 17, 2001. The questionnaires were mailed to selected subjects from Vital Statistics Data (Junco Dotai Chosa Shusseihyo). In total, 53,575 questionnaires were delivered (26,620 for babies born on January 26, 2001, for babies born in July). The number of respondents for the first wave was 47,010 (23,421 for January, 23589 for July), and the rate of collection was 87.7 % (88.0% for January, 87.5% for July). This study has continued to collect data until now, and this study uses its micro data from the seventh wave (2007) and tenth wave (2010) when the children are at first grader (at age7) and fourth-grader (at age 10) respectively.

Variables

This section describes the definition of variables and relevant research. Descriptions of variables are shown in [Table 1](#).

Dependent variable

Child outcome – Child Happiness

For this investigation, the questions that allow the computation of a direct measure of child happiness are based on parents reporting on their child's behavior at school. For the related questionnaires in the 21st baby survey, all items had to be answered on a 3-point scale (1=agree, 2= disagree, 3=neither agree nor disagree) from when his/her child was a first grader to a fourth grader. Data was collected from answers to the following question:

"Is your child looking forward to."

- 1) Seeing his/her friends
- 2) Attending classes

- 3) Eating school lunch
- 4) Meeting his/her teacher
- 5) Participating in school activities (excursion, Sports Day)

[Table 2](#) describes the total number of "agree" responses during the observed period. Most children can be seen being happy (enjoying their school life), however, the ratio of the respondents who replied "agree" to all the questionnaire items decreased from 57.79 points for first graders to 48.67 points for fourth graders. Based on survey results, the total numbers of 'agree' responses were collected for the dependent variable. The simple correlation coefficient matrix in [Table 3](#) shows that there are low correlations between all pairs of items in the five indices examined.

Independent variables

As mentioned in section 1, putative risk factors for child happiness in early life are mainly divided into two categories, 1) physical attributes and 2) SES. The following risk factors are considered to be contributions that are statistically associated with a given child happiness. Definitions and its background, description of independent variables are as indicated below:

Physical attributes

- 1) Low Birth Weight: Low birth weight (LBW) is defined as a child weighing less than 2500 grams (5pounds 8ounces) at birth. Children with LBW have an increased risk of long-term effects on later life (Hack et al., 1995; Almond et al., 2015). A dummy variable, which indicates children with LBW, was created.
- 2) Childhood obesity: Obesity in childhood is also well known to have a significant impact on psychological health, which is a potential risk factor for peer victimization like bullying in late childhood and adolescence. (Dehghan et al., 2005). In this study, the Rohrer index was employed to measure childhood obesity¹. A dummy variable, which indicates a child with obesity at age 7 or 10, was created.

SES

In early childhood, SES, such as family income and economic circumstances, have a profound

¹ Rohrer's index = $\text{weight}(\text{kg}) \div \text{height}(\text{cm})^3 \times 107$: Rohrer index is the most popular obesity index for children and infants.

effect on a child's well-being. Some previous research shows a negative link between problematic home environments and a child's healthy development. The following factors have been employed as an indicator of SES in this study.

- 1) Family income: Poverty is regarded as the most influential risk factor for child well-being. A large body of the related literature demonstrated the children who grow up in poverty are more likely than other peers to have poor outcomes (Brooks-Gunn and Duncan, 1997; Blau, 1999; Berger et al., 2009). A dummy variable, which indicates a higher family income than average at a child's birth, was created.
- 2) Maternal labor supply: As for the maternal labor supply, the empirical results are mixed. While early studies confirmed the negative relationship between maternal labor supply and academic achievements (Leibowitz, 1997, Stafford, 1987), a recent study found that positive effects on a child's wide range of development. For instance, an increase in maternal labor supplied outside of the household leads to a higher schooling probability for younger children (Marchand et al., 2013). A dummy variable, which indicates the mother was working as a full-time employee or self-employed when the child was at age 7 or 10, was created.

Parenting – Parenting style and Parent-child interactions

As discussed above, the early-life risks of physical attributes or SES have profound effects on child well-being. We should note that these circumstances are inevitable and an out of control matter for children themselves. Moreover, there exist happy and healthy children who have been exposed to early-life risks since protective factors such as parenting may mitigate the negative association between these risks and influences (Burchinal et al., 2006). Additionally, Bae et al. (2014) describe that there are more similarities than differences in the effects of parenting and child outcomes in different ethnic groups. From this perspective, parenting style can be a robust predictor of child well-being across a broad spectrum of the environment. Baumrind (1967) conducted research on child development and identified four different important styles of parenting: 1) authoritarian parenting, 2) authoritative parenting, 3) permissive parenting, and 4) uninvolved parenting.

According to Baumrind (1967) classification, the authoritarian parent is highly demanding. Therefore they attempt to control their child and emphasize obedience on their child

based on their set of standards. For example, students with over-controlling parents were more likely to be depressed and less satisfied with their lives since their parents are afraid that their children will have lesser future economic success (Schiffirin et al., 2013; Schiffirin et al.,2014). In contrast, an uninvolved parent is not demanding but not responsive; in other words, neglectful parents. These two extreme types of parenting styles are harmful to children's healthy development (Sternberg et al.,2006).

Following Baumrind (1967), this study classified parenting style into three types taking into consideration Japanese customs and culture. In Japan, cram school, called juku, are special private schools that are common. Cram schools offer lessons conducted after regular school hours and on weekends. Some cram schools provide preparation classes for entering to top schools, and most of them have expensive tuition fees. Also, extra-curricular activities such as English conversation school, sports club, which aims to harness child emotional and physical improvements, are also common.

Considering Japan's unique educational conditions for children, this study classified parenting-related factors into three types. Firstly, "over-parenting" style – families who allocate too much educational budget, the child is attending cram school or extra-curricular activities, and parents often pressure their child to study hard. Secondly, the opposite type of "under-parenting" style was defined based on the child's study time of 0 minutes or under 30 minutes. These parents represent the hands-off policy in education. This study also paid attention to parent-child interaction, which measures the frequency with which mothers or fathers cuddle with their child and represents one of the qualities of parenting (Darling and Steinberg, 1993). Lastly, the good parent-child interaction was determined as a "supportive parenting" style. Thus the study classified three- types of parenting styles are as follows:

Over-parenting:

- i. Family allocates educational expenditure than average
- ii. Child participates in extra-curricular activities
- iii. Child participates in cram school
- iv. Mother who often pressures their child to do their homework at home
- v. Father who often pressures their child to do their homework at home
- vi. Child studies for 60 minutes or over at home on weekdays

Supportive parenting

- i. Mother who spends a lot of time with their child at home
- ii. Father who spends a lot of time with their child at home

Uninvolved parenting

- i. Child studies for 0 minutes or less than 30minutes on a weekday

Other related factors - Early childhood education/care and After school care program

Other than early-life risks and parenting, early childhood is a period of life when significant transformations take place. Young children develop self-esteem, improve emotional stability, and form friendships through interactions with other people besides family members (Brooks-Gunn et al., 2003). Moreover, some previous studies supported that activities which focus children's attention on similarities between themselves and other persons promote affective and cognitive empathy (Black and Phillips 1982)

Japan's child education/care is unique compared to the rest of the world. There are mainly two kinds of institutions involved in preschool education and care: 1) kindergartens, which is in the education sector², 2) day nurseries, which focuses on the welfare sector³, and almost all children attend either kindergarten or day nurseries in Japan. Recently, the increasing number of working mothers has caused the enrollment of day nursery to rise, while the enrollment of kindergartens fell. As for elementary schools, they offered a subsidized and structured after school care program where pupils with working mothers can go each day to do homework, play on the playground, and have snacks at the center with peers (NIER, 2011). To identify factors through which these out of home factors may affect child happiness, this study used data on 1) early childhood education/ care, 2) after school activity. Dummy variables for these factors were created, as indicated below.

Early childhood education /care

- i. Child attended kindergarten before entering elementary school
- ii. Child attended nursery school before entering elementary school

² Ministry of Education, Culture, Sports, Science and Technology (MEXT)

³ Ministry of Health, Labour and Welfare, respectively. From 2006, both sectors have collaborated in the authorization of a new unified system, the centers for ECEC (nintei kodomen).

After school program

- i. Child attends after school care program after school at age 7 or 10
- ii. Child spend time with his/her friends after school at age7 or 10
- iii. Child stay at home after school at age 7 or 10

ESTIMATION RESULTS

The count data model was carried out to explore the role of suggested factors in parent-reported child happiness. [Table 4](#) shows the results for the basic estimation at child's age at 7 (first grade) and 10 (fourth grade). Our analysis suggested that early-life risks of LBW were not statistically significant both at age seven nor 10. Obesity was positively significant at age 7. However, it has disappeared at age10. The results displayed that real disadvantages in early-life does not have serious impacts on child happiness. As for the initial risks of SES, a child who comes from a relatively high-income family showed positive effects. On the other hand, having a working mother was generally assumed to affect child happiness negatively. However, this study showed an entirely different influence. The results illuminated that maternal employment will not be harmful to their child's healthy development.

Parenting related results described that both over and under parenting have adverse effects on child well-being; that is, children were probably more likely to be less happy when they are participating in extra-curricular activities, studying less at home, and when their mother often pressures them. Conversely, supportive parents who are voluntarily involved in childrearing and children who participate after school care programs were all factors that showed an increase in child happiness.

As for the factors other than above, the adverse effects of nursery attendance observed at age7 had disappeared at age 10. Although children who are staying at home or spending time with their friends after school did not show significant results at age 7, the results of children who are staying at home turned into negative at age 10. Additionally, girls seem to evaluate their school-life more positively than boys, which is common for both ages.

CONCLUSION

Results indicate that high family income in early life is strongly correlated with positive child outcomes. This finding is robust and consistent with past research. However, despite this clear correlation between SES and child development, the question of why these disparities exist has

not been settled (Yeung et al. 2002). This study found that extreme parenting styles are linked to reduced child emotional health. These influences, however, are progressively mitigated through supportive parenting and after-school care programs through the interaction of having a fun time with parents and peers.

What might explain the results? One question of interest is whether we can explain a large part of the observed relationship between early-life risks and child happiness. However, any early-life risks such as LBW, obesity, or extreme types of parenting present can be overcome given properly-managed parenting behavior.

Acknowledgements

The Japan Society supported this work for the Promotion of Science (JSPS) KAKENHI (Grants-in-Aid for Scientific Research) Grant No. 16K01907.

REFERENCES

- Almond, D., Chay, K.Y., and Lee, D.S. (2005). "The cost of low birth weight," *The Quarterly Journal of Economics*, No.120 (3), pp1031-1083.
- Anger, S., and Schnitzlein, D, D. (2016). "Cognitive Skills, Non-Cognitive Skills, and Family Background: Evidence from Sibling Correlations," *IZA Discussion Paper*, No.9918.
- Bae, H., Hopkins, J., Gouze, K. R., and Lavigne, J.V. (2014). "Parenting, Child Behavior, and Academic and Social Functioning: Does Ethnicity Make a Difference?" *Child and Youth Care Forum*, Vol.43 (4), pp.433-454.
- Baumrind, D. (1967). "Child-care practices anteceding three patterns of preschool behavior," *Genetic Psychology Monographs*, Vol.75, No.1, pp.43-88.
- Berger, L. M., Paxson, C., and Waldfogel, J. (2009). "Income and child development," *Children and Youth Services Review*, Vol.31, pp.978-989.
- Blau, D.M. (1999). "The effect of income on child development," *The Review of Economics and Statistics*, Vol. 81, pp.261-276.
- Bowles, S., and Gintis, H. (2002). "Schooling in capitalist America revisited," *Sociology of Education*, Vol.75 (1), pp.1-18.
- Black, H., and Phillips, S. (1982). "An Intervention Program for the Development of Empathy in Student Teachers," *The Journal of Psychology*, Vol.12, pp.159-168.
- Bradshaw, J. (2002). "Child poverty and child outcomes," *Children and Society*, Vol.16, pp.131-140
- Brooks-Gunn, J., and Duncan, G, J. (1997). "The effects of poverty on children," *The Future of Children*, Vol. 7 (2), pp.55-71.
- Brooks-Gunn, J., Fuligni, A. S., Berlin, L. J. (2003). *Early child development in the 21st century: Profiles of current research initiatives*. New York: Teachers College Press.

- Burchinal, M., Roberts, J.R., Zeisei, S.A., Hennon, E.A., and Hooper, S. (2006). "Social risk and protective child, parenting, and child care factors in early elementary school years," *Parenting: Science and Practice*, Vol.6 (81), pp.79-113.
- Cunha, F., and Heckman, J.J. (2009). "The Economics and Psychology of Inequality and Human Development," *Journal of the European Economic Association*, Vol.7 (2-3), pp.320-364.
- Cunha, F., and Heckman, J.J. (2008). "Formulating, identifying and estimating the technology of cognitive and non-cognitive skill formation," *Journal of Human Resources*, Vol.43 (4), pp.738-782.
- Cunha, F., Heckman, J.J., and Schennach, S. (2010). "Estimating the technology of cognitive and non-cognitive skill formation," *Econometrica*, Vol.78 (3), pp.883-931.
- Darling, N., and Steinberg, L. (1993). "Parenting Style as Context: An Integrative Model," *Psychological Bulletin*, Vol.113 (39), pp487-496.
- Dehghan, M., Akhtar-Danesh, N., and Merchant, A, T. (2005). "Childhood obesity, prevalence and prevention," *Nutrition Journal*, Vol.2, pp.4-24.
- Denissen, J. J., Zarrett, N. R., and Eccles, J. S. (2007). "I like to do it, I'm able, and I know I am: Longitudinal couplings between domain-specific achievement, self-concept, and interest," *Child Development*, Vol.78 (2), pp.430-447.
- Duncan, G. and Brooks-Gunn, J. (1997). *Consequences of Growing Up Poor*. Russell Sage Foundation, New York.
- Ermisch, J., Francesconi, M. and Pevalin, D. J. (2001). "Outcomes for Children of Poverty," No. 158, Corporate Document Services, Leeds.
- Gutman, L, Brown, JF and Akerman, R. (2009). "Nurturing parenting capability: the early years," *Wider Benefits of Learning Research Report*, No. 30.
- Hack, M., Klein, N.K., and Taylor, H. G. (1995) "Long-term developmental outcomes of low birth weight infants," *Future Child*, Vol.5 (1), pp176-96.
- Heckman, J.J. (2006). "Skill Formation and the Economics of Investing in Disadvantaged Children." *Science*, 312 (5782), pp.1900-1902
- Heckman, J.J., Stixrud, J., and Urzua, S. (2006). "The Effects of Cognitive and Non-cognitive Abilities On Labor Market Outcomes and Social Behavior," *Journal of Labor Economics*, Vol.24, pp.411- 482.
- HM Treasury. (2010) *Spending Review 2010*, The Stationery Office, London. Layard, L.(2013). "Mental health: The New Frontier for Labour Economics," *CED Discussion Paper*, No.1213, Center for Economic Performance.
- Leibowitz, A. (1997). "Parental inputs and children's achievement," *Journal of Human Resources*, Vol.12 (2), pp.242-251.
- Lleras, C. (2008). "Do skills and behaviors in high school matter? The contribution of non-cognitive factors in explaining differences in educational attainment and earnings," *Social Science Research*, Vol.37 (3), pp.888-902.

- Marchand, B. U., Rees, R., and Rizman, R. (2013). "The effect of parental labor supply on child schooling: evidence from trade liberalization in India," *Review of Economics of Household*, Vol.11 (2), pp.151-173.
- NIER. (2011). *Preschool education and care, Education in Japan*. (<http://www.nier.go.jp/English/educationjapan/pdf/201109ECEC.pdf>).
- Schiffrin, H., Liss, M., Miles-McLean, H., Geary, K., Erchull, M. and Tashner, T. (2013). "Helping or Hovering? The Effects of Helicopter Parenting on College Students' Well-Being," *Journal of Child and Family Studies*, Vol.23 (3), pp.548-557.
- Schiffrin, H., Godfrey, H., Liss, M. and Erchull, M. (2014). "Intensive Parenting: Does it have the desired impact on child outcomes?" *Journal of Child and Family Studies*, Vol.24(8), pp.2322-2331.
- Stafford, F.P. (1987). "Women's work, sibling competition and children's school performance," *American Economic review*, Vol.77 (5), pp.972-980.
- Sternberg, K.J, Baradaran, L.P, Abbot, C.B., Lamb, M.E, Guterman, E. (2006). "Type of violence, age, and gender differences in the effects of family violence on children's behavior problems: A mega-analysis," *Developmental Review*, Vol.26, pp.89–112.
- Sirin, S. R. (2005). "Socio-economic status and academic achievement: A meta-analytic review of research," *Review of Educational Research*, Vol. 75, No. 3, pp. 417–453.
- Todd, P.E., and KiwiPlus. (2003). "On the specification and estimation of the production function for cognitive achievement," *Economic Journal*, Vol.113 (485), pp.3-33.
- Todd, P.E., and Wolpin, K.I. (2007). "The production of cognitive achievement in children: home, school and racial test score gap," *Journal of Human Capital*, Vol.1 (1), pp. 91-136.
- Yeung, W., M.R. Linver., and Brooks-Gunn, J. (2002). "How money matters for young children's development: Parental investment and family processes," *Child Development*, Vol. 73, pp.1861–1879.
- Rohrer's index?weight(kg)÷height(cm)³×107: Rohrer index is the most popular obesity index for children and infants. Ministry of Education, Culture, Sports, Science and Technology (MEXT)
- Ministry of Health, Labour and Welfare, respectively. From 2006, both sectors have collaborated in the authorization of a new unified system, the centers for ECEC (nintei kodomoen).

APPENDIX

Table 1 Description of variables

	Variable	Description	
Sex	Boy	Dummy variable which is coded 1 if child is a boy, 0 if a girl.	
Early-life risks - Physical attributes	Low birth weight	Dummy variable which is coded 1 if child's birth weight was less than 2,500 g (5 pounds 8 ounces), 0 if greater.	
	Obesity at age 7or10	Dummy variable which is coded 1 if child's Rohrer index exceeds 160 when child was at age 7or10, 0 if otherwise.	
-SES	Family income exceeds the average when child is age 0	Dummy variable which is coded 1 if respondent's family income from the previous year when their child was at age 0 exceeds the	
	Mother was working as a full-time employee when child was at age	Dummy variable which is coded 1 if mother was working as a full-time employee when child was at age 7or10, 0 if otherwise.	
Parenting style - over parenting	Greater investment in child's education at age 7or10	Dummy variable which is coded 1 if respondent allocates higher child's educational expenditure than average when child was at age 7or10, 0 if below the average.	
	Participating in extra-curricular activities at age 7or10	Dummy variable which is coded 1 if child participates in one or more extracurricular activities when child was at age 7or10, 0 if child does not participate at all.	
	Attending cram school at age 10	Dummy variable which is coded 1 if child attends cram school when child was at age10, 0 if otherwise.	
	Mother often pressures child to do well at age 7or10	Dummy variable which is coded 1 if mother /father constantly monitors child's homework or pressures the child to study very often when child was at age 7or10, 0 if otherwise.	
	Father often pressures child to do well at age 7or10	Dummy variable which is coded 1 if mother /father constantly monitors child's homework or pressures the child to study very often when child was at age 7or10, 0 if otherwise.	
	Study time is 60 min or more at age 7or10	Dummy variable which is coded 1 if study time at home is 60 minutes or more when child was at age 7or10, 0 if otherwise.	
	-supportive parenting	Mother spends a lot of time at home with the child/children at age 7or10	Dummy variable which is coded 1 if mother spends a lot of time at home with the child/children when child was at age 7or10, 0 if
		Father spends a lot of time at home with the child/children at age 7or10	Dummy variable which is coded 1 if father spends a lot of time at home with the child/children when child was at age 7or10, 0 if
	-under parenting	Study time is 0 min or less than 30 min at age 7or10	Dummy variable which is coded 1 if study time at home is less than 30 minutes when child was at age 7or10, 0 if otherwise.
	Early childhood education/care	From day nursery	Dummy variable which is coded 1 if child attended kindergarten when he/she was at age 6, 0 if otherwise.
From kindergarten		Dummy variable which is coded 1 if child attended nursery school when he/she was at age 6, 0 if otherwise.	
After school care program	Staying at after school care program after school at age 7or10	Dummy variable which is coded 1 if child is usually at after school care program when child was at age 7or10, 0 if otherwise.	
	Spending time with his/her friends after school at age 7or10	Dummy variable which is coded 1 if child is usually with his/her friends after school when child was at age 7or10, 0 if otherwise.	
	Staying at home after school at age 7or10	Dummy variable which is coded 1 if child is usually at home after school when child was at age 7or10, 0 if otherwise.	

Table 2. The total numbers of "agree" responses

The total number of "agree" responses	First grader (at age 7)		Fourth grader (at age 10)	
	Frequency	%	Frequency	%
0	490	1.3%	570	1.7%
1	964	2.6%	1121	3.3%
2	2095	5.7%	2610	7.7%
3	3855	10.5%	4792	14.1%
4	8033	22.0%	8305	24.5%
5	21133	57.8%	16499	48.7%
Total	36570	100.0%	33897	100.0%

Table 3 Correlation between variables

	First grader (at age 7)				
	Seeing friends	Going to class	School lunch	Seeing school teacher	Participating in a event
Seeing friends	1				
Going to class	0.348*	1			
School lunch	0.210*	0.284*	1		
Seeing school teacher	0.278*	0.376*	0.256*	1	
Participating in a event	0.323*	0.300*	0.201*	0.240*	1

	Fourth grader (at age 10)				
	Seeing friends	Going to class	School lunch	Seeing school teacher	Participating in a event
Seeing friends	1				
Going to class	0.317*	1			
School lunch	0.208*	0.293*	1		
Seeing school teacher	0.218*	0.342*	0.234*	1	
Participating in a event	0.314*	0.281*	0.202*	0.196*	1

*p<.01

Resource) The Longitudinal Survey of Babies in the 21st Century (Seventh Wave, 2007 and Tenth Wave, 2010).

Table 4. Count data model for child happiness

Variable	First grader (at age7)				Fourth grader (at age10)			
	Coefficient	Std. Error	z-Statistic	Prob.	Coefficient	Std. Error	z-Statistic	Prob.
C	1.418	0.024	58.659	0.000	1.408	0.024	58.336	0.000
Sex								
Boy	-0.050	0.006	-7.745	0.000	-0.028	0.006	-4.387	0.000
Early-life risks (physical attributes)								
Low birth weight	0.003	0.012	0.275	0.783	-0.002	0.012	-0.168	0.867
Obesity at age 7/10	0.000	0.000	3.768	0.000	0.000	0.000	1.000	0.317
Early-life risks (SES)								
Family income exceeds the average when child is age 0	0.008	0.004	1.933	0.053	0.011	0.004	2.369	0.018
Mother was working as a full-time employee when child was at age 7/10	0.028	0.009	3.205	0.001	0.018	0.008	2.211	0.027
Parenting style (over parenting)								
Greater investment in child's education at age 7or10	0.000	0.003	-0.137	0.891	-0.006	0.004	-1.432	0.152
Participating in extra-curricular activities at age 7or10	-0.030	0.008	-3.773	0.000	-0.073	0.011	-6.454	0.000
Attending cram school at age 10	-	-	-	-	0.004	0.007	0.587	0.557
Mother often pressures child to do well at age 7or10	-0.018	0.007	-2.646	0.008	-0.020	0.007	-2.929	0.003
Father often pressures child to do well at age 7or10	0.001	0.010	0.080	0.936	-0.012	0.010	-1.272	0.203
Study time is 60 min or more at age 7or10	0.005	0.009	0.531	0.596	0.011	0.007	1.604	0.109
Parenting style (supportive parenting)								
Mother spends a lot of time at home with the child/children at age 7or10	0.024	0.013	1.859	0.063	0.055	0.012	4.444	0.000
Father spends a lot of time at home with the child/children at age 7/10	0.024	0.007	3.419	0.001	0.044	0.007	6.315	0.000
Parenting style (under parenting)								
Study time is 0 min or less than 30 min at age 7or10	-0.034	0.007	-4.757	0.000	-0.048	0.009	-5.186	0.000
Early childhood education/care								
From day nursery	-0.016	0.008	-1.902	0.057	0.008	0.008	0.946	0.344
From kindergarten	-0.005	0.008	-0.576	0.565	0.003	0.008	0.347	0.729
After school care program								
Staying at after school care program after school at age or10	0.033	0.008	4.243	0.000	0.043	0.007	6.016	0.000
Spending time with his/her friends after school at age 7or10	0.010	0.008	1.177	0.239	-0.014	0.008	-1.707	0.088
Staying at home after school at age 7or10	-0.018	0.015	-1.208	0.227	-0.031	0.009	-3.469	0.001
Included observations (after adjustments)	23331				25051			
Log likelihood	-42479.00				-45822.29			