

The Influence of Maternal and Family Risk on Chronic Absenteeism in Early Schooling

Mariajosé Romero ■ Young-Sun Lee | January 2008

NCCP National Center for
Children *in Poverty*
Columbia University
MAILMAN SCHOOL OF PUBLIC HEALTH

The National Center for Children in Poverty (NCCP) is the nation's leading public policy center dedicated to promoting the economic security, health, and well-being of America's low-income families and children. Founded in 1989 as a division of the Mailman School of Public Health at Columbia University, NCCP is a nonpartisan, public interest research organization.

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by Mariajosé Romero and Young-Sun Lee

This report is the second in a series examining the causes and consequences of chronic absenteeism during the early school years, based on analyses of data from the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K, National Center for Education Statistics). It is part of NCCP's larger Pathways to Early School Success project.

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This analysis is part of Pathways to Early School Success, a project central to NCCP's larger goal to promote strategies that improve the social, emotional and physical health of low-income children in the U.S.

An extensive body of research in the past two decades has established the detrimental impact of poverty and economic hardship on children's development and wellbeing.¹ We have learned that exposure to economic and other risks arising from the sociodemographic characteristics of parents and families, the patterns of intra-family interaction and communication, as well as from the poor quality of the environment in the home, the neighborhood and the broader community negatively impacts on children's cognitive development, socioemotional functioning, and school performance. Risk factors commonly examined include: poverty; food insecurity; low parental education; low maternal IQ; parental unemployment; single parent status; teen parenthood; use of social assistance; poor parental physical and mental health; large family size; living in rented housing; overcrowding and poor housing conditions; homelessness; child maltreatment; non-stimulating home environment; little parental responsiveness, teaching and interaction; over-reliance in harsh discipline techniques; little contact with the father; parent involvement with the justice system; stressful life events; and quality of the child care environment.²

Recent research has moved from descriptive studies of the relation between exposure to risk and child outcomes, to attempts to understand the mechanisms by which poverty and economic hardship compromise children's development and wellbeing, as well as to determine whether this effect depends on the timing and duration of risk exposure.³ It has become clear that risks in the child's physical and socio-psychological environment tend to co-occur and, in many instances, are correlates of or contextual factors associated to poverty, often mediating its effect on child outcomes. Indeed, poverty negatively affects every aspect of children's lives.⁴ The literature has identified the lack of competence-promoting parenting practices, specifically, little maternal sensitivity, empathy, and affectionate and nurturing behaviors, together with low quality of the home environment and the parent-child interaction, as factors that mediate the harmful effect of poverty on children's self-regulation and social development, behavior problems, language and vocabulary, and school achievement.⁵

Relatively little attention has been paid, however, to the role of the schooling experience in the educational trajectories and outcomes of children exposed to risk. In fact, most of the research has focused on children prior to entering formal schooling. Thus we do not know whether risk exposure influences in any way the patterns of attendance and engagement in early schooling that are known to negatively affect learning and performance.

Building on previous analyses that revealed a significant level of absenteeism in the early school years,⁶ especially among low-income children, and confirmed its detrimental ef-

fects on school success, this second report in this series explores how maternal and family risks impact early school absenteeism. Using data from a nationally representative sample of kindergartners from across various incomes and race/ethnicity groups – the Early Childhood Longitudinal Study (Kindergarten Cohort)⁷, NCCP examines the prevalence of risk factors known to threaten young children’s healthy development and early school success. These include: poverty, teenage and/or single parenting, low levels of maternal education, receipt of welfare, unemployment, poor maternal health, food insecurity, and large family size – that is, four or more children at home. It also assesses the cumulative impact of early exposure to multiple risk factors, building on a large body of research showing that the more demographic and psycho-social risks children encounter, the more likely they are to experience poor developmental and school outcomes.⁸

This report shows that maternal and family risks are associated with greater absenteeism and that the cumulative exposure to risk best predicts chronic absenteeism in early schooling. Kindergartners in contact with three or more risks missed, on average, three or more days than their peers not facing any risks. But as children progress through the elementary grades, the impact of cumulative risk on school attendance lessens, only to rise again in the fifth grade. This report also reveals that it is the most vulnerable children – that is, those who are poor or racial/ethnic minorities or suffer from poor health – who have the greatest exposure to cumulative risk.

How Prevalent are Maternal and Family Risks among U.S. Elementary School Children?

The maternal and family risks most commonly encountered by U.S. kindergartners include living with a single mother (19 percent), below the Federal Poverty Level (FPL, 18 percent),⁹ in a large family (14 percent), or with a mother who had not completed high school (12 percent). The least frequent risks were being born to a teenage mother (4 percent) or living with an unemployed mother (4.5 percent).

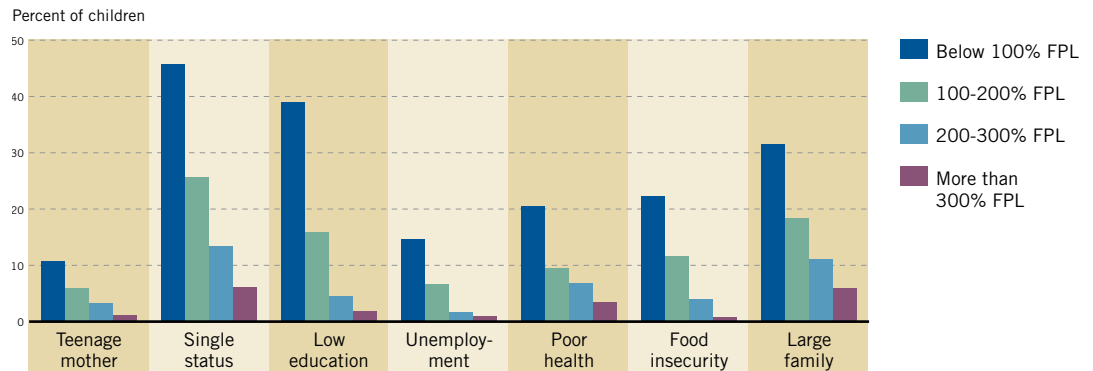
Poverty was among the risks most commonly encountered by U.S. kindergartners



These risks, however, were more persistent among the most vulnerable children – that is, those who were poor, racial/ethnic minorities, or suffered from poor health. Children living in poverty, and to some extent low income children – that is, between 100 and 200 percent of the Federal Poverty Level – were more likely than their higher income counterparts to

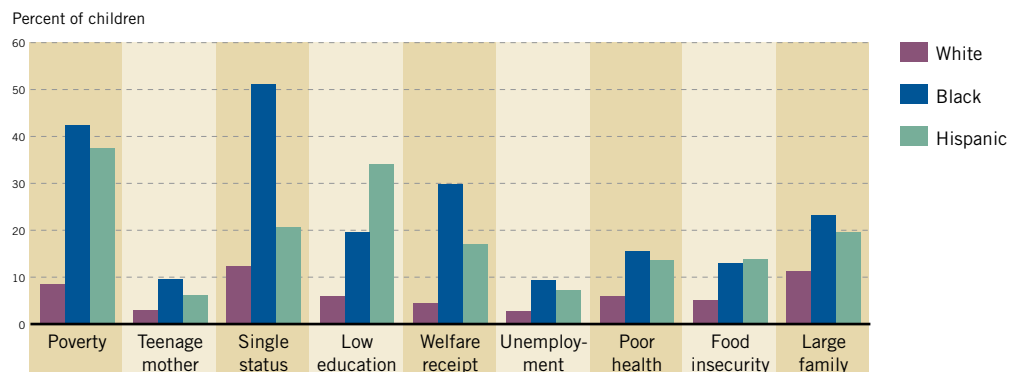
experience maternal and family risks. Consistently, the lower the income-to-needs ratio, the higher the incidence of maternal and family risk.¹⁰ Some risks appeared to be more dependent than others on income-to-needs variations: thus, for every affluent kindergartner – that is, living at 300 percent of, or above the Federal Poverty Level – who experienced each of the following risks, 30 poor children experienced food insecurity at home;¹¹ 20 had a mother with low education; 15 had an unemployed mother; nine were born to a teenage mother; seven lived with a single mother; six had a mother with poor health; and five lived in a family with four or more children.

Poor and low-income children were more likely to experience maternal and family risks



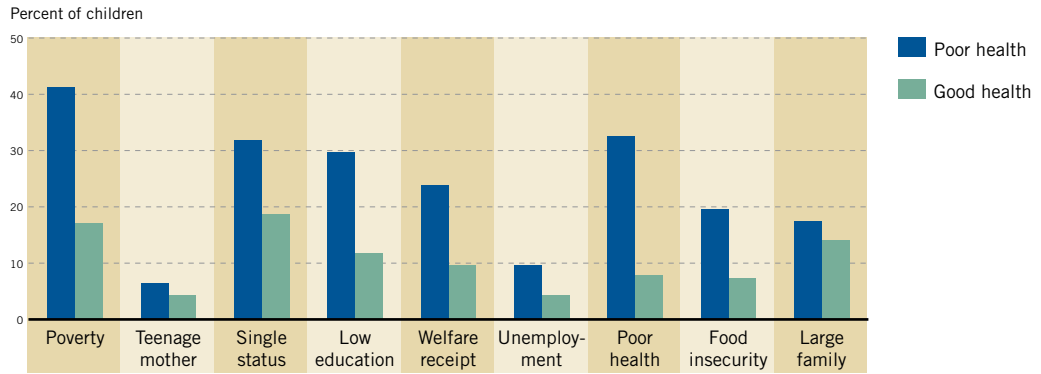
Nonwhite children consistently experienced greater risks than their white counterparts.¹² Black children encountered more risks than did Hispanic children, except for low maternal education, which was more common among the latter than among the former. Differences in risk exposure between black and Hispanic children were the greatest regarding welfare receipt, low maternal education, and single mother status, and were almost negligible with all other risk factors. Thus, for every white kindergartner experiencing each of the following risks, six black and four Hispanic children had mothers on welfare; four black and two Hispanic children lived with a single mother; and three black and six Hispanic children had a mother with low education. For every white kindergartner who experienced each of the following risks, five children of each nonwhite group lived in poverty; three faced food insecurity at home; three were born to a teenage mother; two had a mother with poor health; and two lived in families with a large number of children.

Non-white kindergartners experienced greater maternal and family risks than their white peers



Kindergartners with poor health were more likely to encounter more risks than their healthy peers.¹³ For every healthy child experiencing each of the following risks, four unhealthy children had a mother with poor health; three had a mother with low education or on welfare; three encountered food insecurity at home; and two lived in poverty. Variations by child health status in exposure to other risks were not significant.

Kindergartners with poor health encountered greater risks than their healthy peers



How Do Individual Risk Factors Relate to Early Chronic Absenteeism?

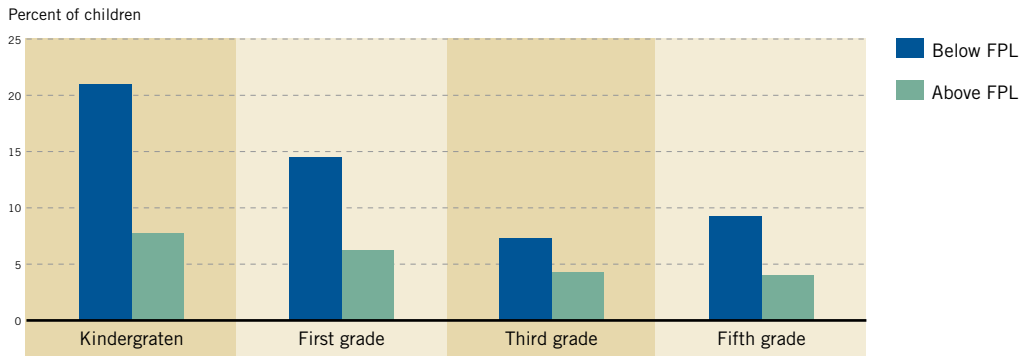
Absenteeism patterns in the elementary grades appeared to be related to a variety of maternal and family risks. Children exposed to poverty; to mothers who were teenagers at birth of the child, single, with less than a high school credential, on welfare, unemployed, or with poor health; or to households with four or more minors or with food insecurity, missed a greater number of school days than their peers who did not experience these risks.¹⁴ Differences in absences comparing each individual risk, in general, were small, with poverty resulting in four extra days of absenteeism in kindergarten, on average, and food insecurity and welfare receipt resulting in 2.5 additional days of absenteeism in the same grade. These differences were the highest in this grade, and decreased steadily through third grade, reflecting increases in overall attendance observed in early elementary schooling, only to rise again, even if slightly, in fifth grade.

These aggregate patterns, however, mask the existence of very different groups of children in terms of their absenteeism patterns: despite attendance improvements observed between kindergarten and third grade, in every grade children experiencing any risk were more often chronic absentees – that is, they missed 10 percent or more of the school year – than those who did not encounter any risks. The ratio of chronic absentees with risks to those without risk was the highest in kindergarten and decreased from this grade to third grade, but increased again in fifth grade.

Poverty

Across grades, children living in families below the Federal Poverty Level missed, on average, slightly over one day more than their non-poor peers. In kindergarten, 21 percent of poor children were chronic absentees, compared to nearly 8 percent of their non-poor peers.¹⁵

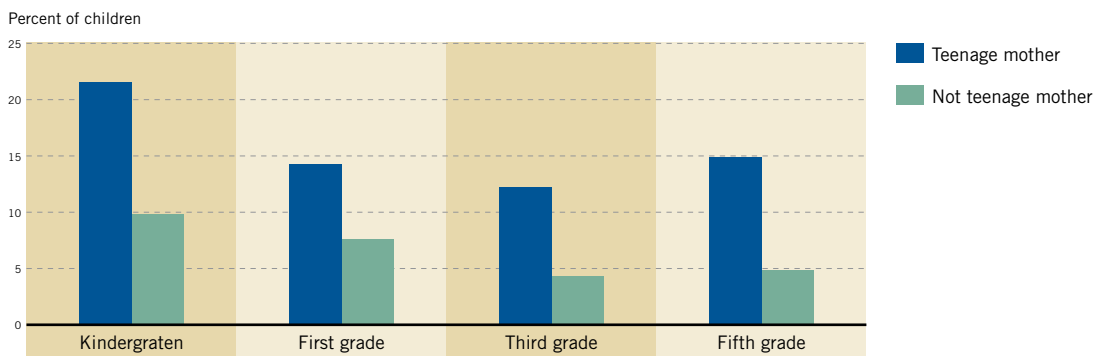
Children living below the Federal Poverty Level were more likely to be chronic absentees in the elementary grades



Teenage Mother

Children born to teenage mothers were absent over one day more, on average, than those born to mothers older than 18 years. In kindergarten, almost 22 percent of children born to teenage mothers and almost 10 percent of those born to older mothers missed 10 percent or more of the school year.¹⁶

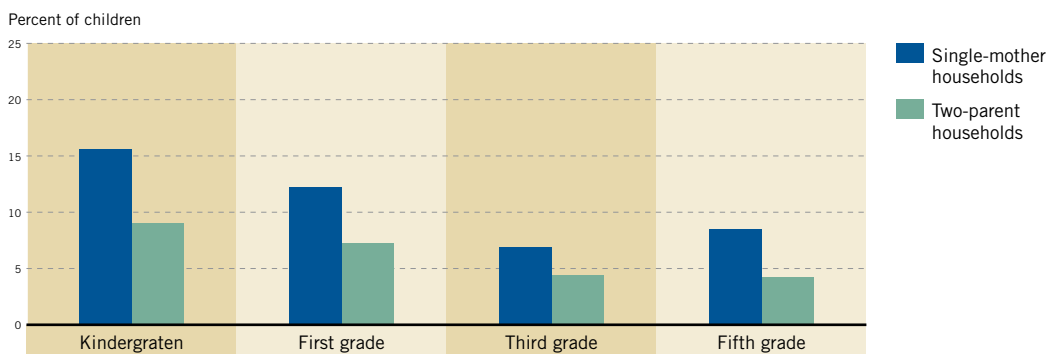
Children of teenage mothers were more likely to be chronic absentees in the elementary grades



Single Mother

Children living in mother-only households missed one day more, on average, than children living in two-parent households. Nearly 16 percent of kindergartners living in mother-only households and 10 percent of those living in two-parent households were chronic absentees.¹⁷

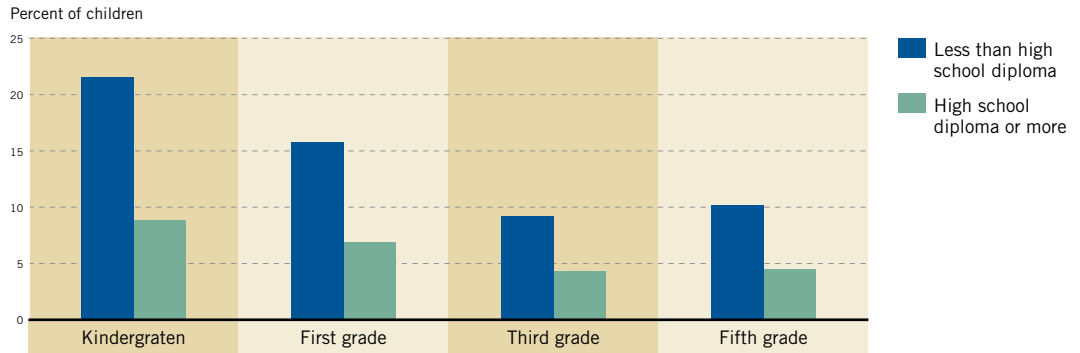
Children of single mothers were more likely to be chronic absentees in the elementary grades



Low Maternal Education

Children whose mothers had less than a high school education missed, on average, almost 1.5 more days of school than those of mothers with a high school education or more. In kindergarten, 22 percent of children of mothers with low education were chronic absentees, compared to 9 percent of those whose mothers had completed at least high school.¹⁸

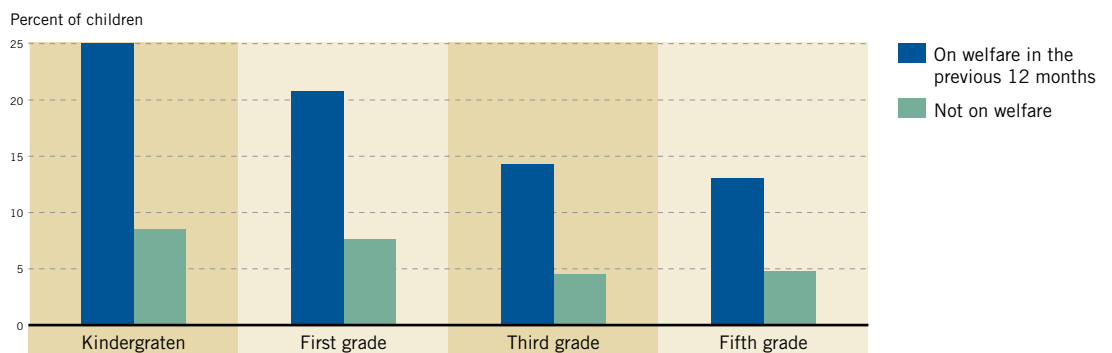
Children of mothers with low education were more often chronic absentees in the elementary grades



Welfare Receipt

Children whose mothers were on welfare during the previous 12 months missed, on average, 1.7 more days of school than their counterparts in the elementary grades. In kindergarten, 25 percent of children whose mothers were on welfare and 9 percent of their non-welfare peers were chronic absentees.¹⁹

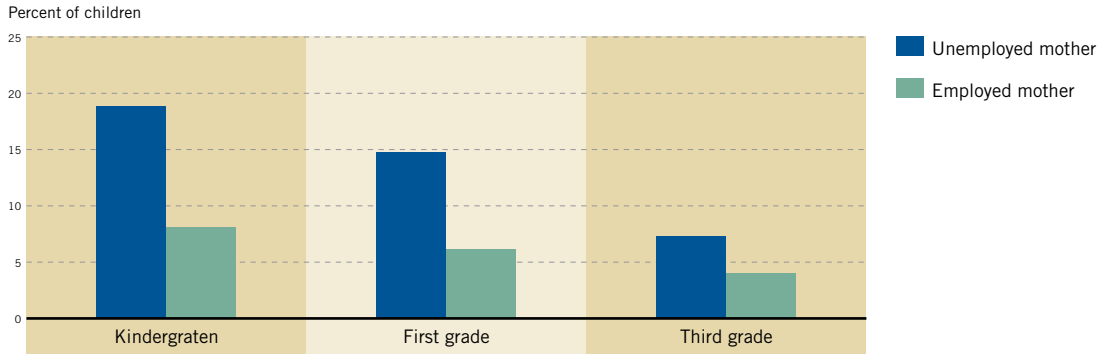
Children whose mothers were on welfare were more likely to be chronic absentees in the elementary grades



Unemployment

Children whose mothers were unemployed were absent, on average, over two days more than their counterparts in the elementary grades. In kindergarten, children of unemployed mothers were 2.3 times more likely than their counterparts to be chronic absentees (19 percent versus 8 percent).²⁰

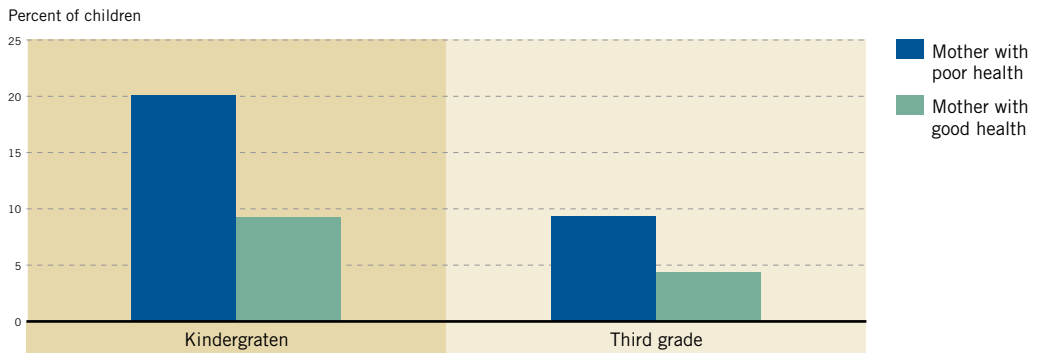
Children of unemployed mothers were more likely to be chronic absentees in the elementary grades



Mother with Poor Health

Children whose mothers reported experiencing poor health missed almost two days of kindergarten, on average, than those whose mothers were in good health. They were over twice as likely as their counterparts to be chronic absentees.²¹

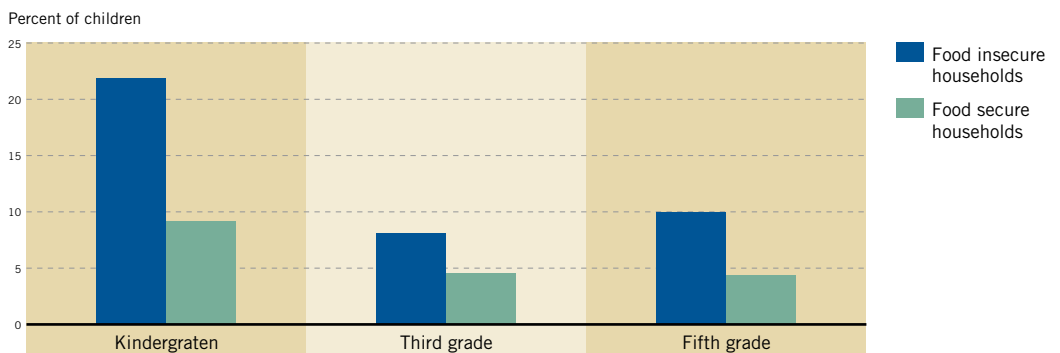
Children of mothers with poor health were more likely to be chronic absentees in the elementary



Food Insecurity

Kindergartners living in households experiencing food insecurity skipped, on average, over two days more of school than their peers living in food-secure households. Twenty-two percent of kindergartners in food-insecure households were chronic absentees, compared to 9 percent of their peers in food-secure households.²²

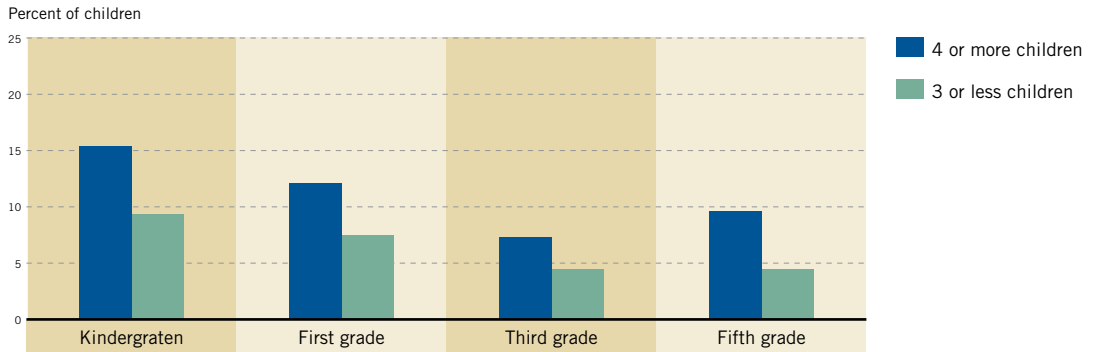
Children in households experiencing food insecurity were more likely to be chronic absentees in the elementary grades



Four or More Children at Home

Kindergartners living in homes with four or more minors missed, on average, one day more of school than their peers in small families. In kindergarten, 15 percent of the former and 9 percent of the latter were chronic absentees.²³

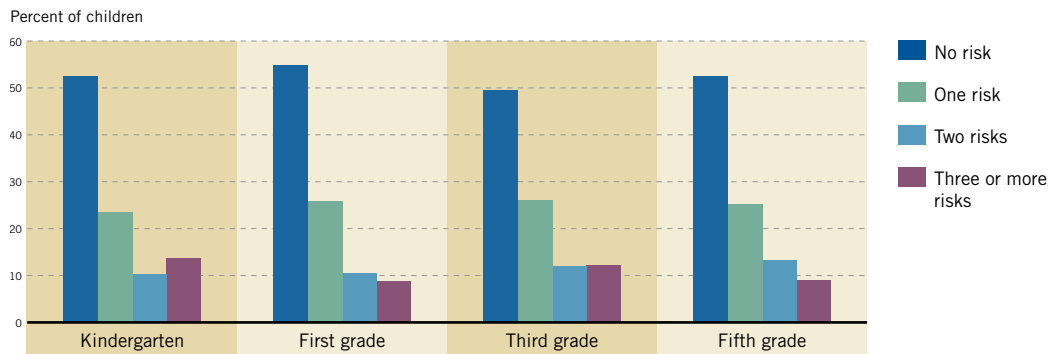
Children in large families were more likely to be chronic absentees in the elementary grades



What is the Incidence of Cumulative Risk among U.S. Children?

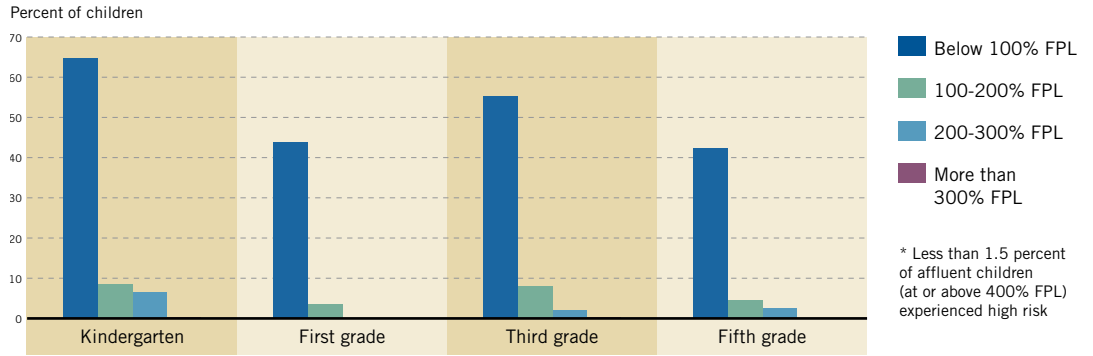
Exposure to high risk, that is, three or more risks early in life has detrimental consequences for children's later development and learning.²⁴ In this study, almost 14 percent of kindergartners experienced high levels of risk, compared to 53 percent who faced no risk, and 23 percent and 10 percent who were exposed to one and two risks, respectively. The proportion of children encountering three or more risks diminished over the grades, reaching 9 percent in fifth grade.²⁵

Less than one in seven elementary school students experienced high risk



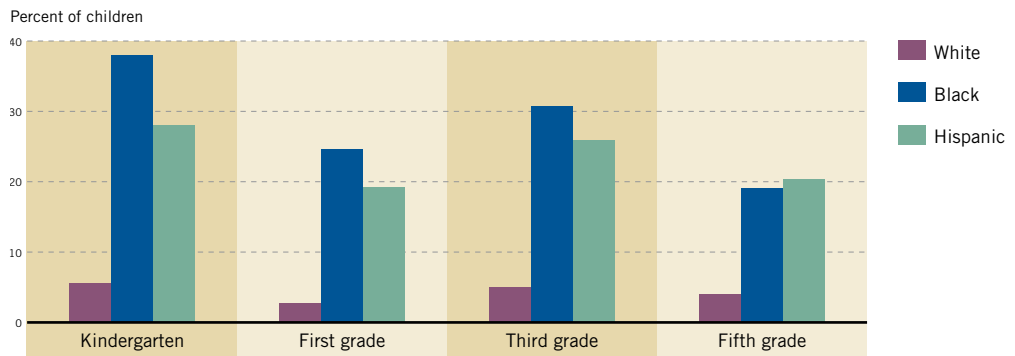
Poor and low income children were more likely than their more affluent peers to encounter high risk throughout their elementary school lives. Sixty-five percent of poor kindergartners faced three or more risks, compared to 9 percent of low income, 7 percent of middle income, and less than 1 percent of affluent peers – that is, living at 300 percent or above of the Federal Poverty Level.²⁶ In all income groups, exposure to high risk diminished over the elementary grades. However, the gap between poor and affluent children in high risk exposure widened over time: for every affluent kindergartner facing three or more risks, there were 150 poor peers facing the same high level of cumulative risk. This ratio almost doubled by the fifth grade.

Poor children were more likely to experience three or more risks than their wealthier peers*



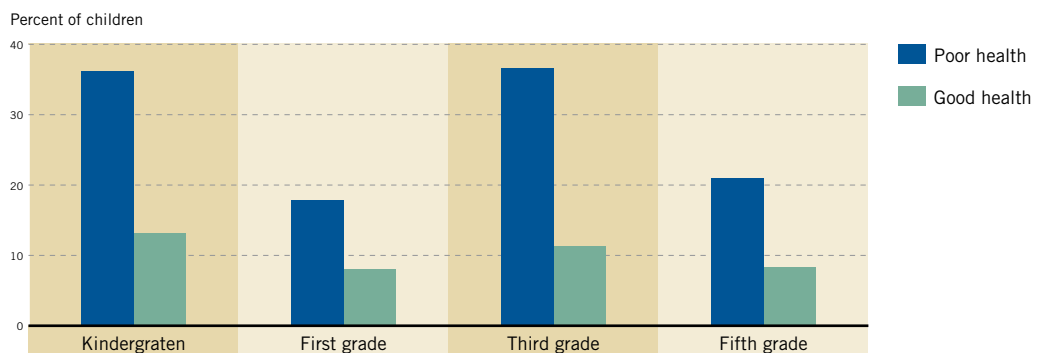
On average, black and Hispanic children were, respectively, five and four times more likely than their white peers to be exposed to three or more risks.²⁷ In kindergarten, 6 percent of white children faced high cumulative risk, compared to almost two-fifths of black children and over one-fourth of Hispanic children.

Black and Hispanic children were more likely to experience three or more risks than their white peers



Children whose health was poor as reported by parents were three times more likely than their healthy peers to experience three or more risks.²⁸ Among kindergartners, over one-third of children with poor health were exposed to high risk, compared to 13 percent of their healthy counterparts.

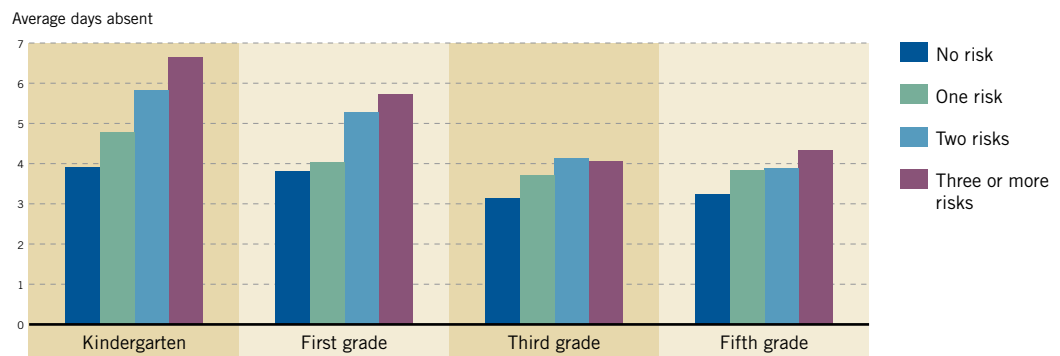
Children with poor health were more likely to experience three or more risk factors than their healthy peers



How Does Cumulative Risk Relate to Early Chronic Absenteeism?

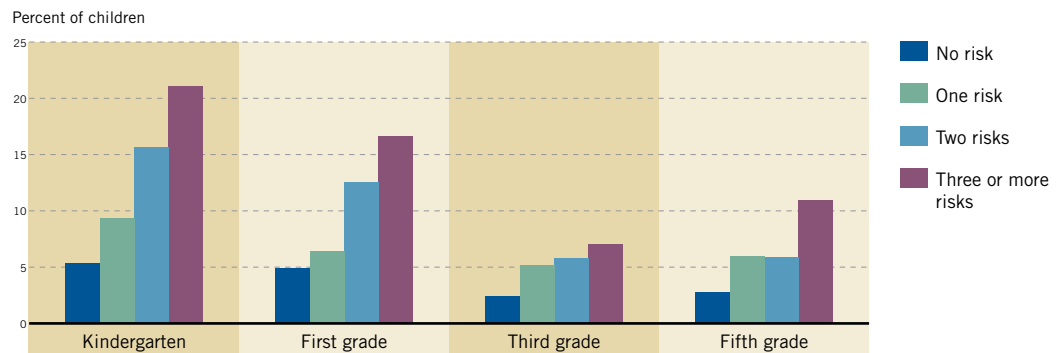
The cumulative experience of risks, rather than the additive effect of each individual risk, was related to chronic absenteeism in the elementary school. In general, the greater the exposure to cumulative risk, the greater the absenteeism. Regardless of income- and race/ethnicity-based differences in absenteeism, kindergartners with three or more risks averaged almost three more absences than their peers not exposed to any risk. This difference decreased to two and less than one day, on average, in first and third grade, and rose to over one day in fifth grade. Except for kindergarten, in all other grades the relation between cumulative risk and absenteeism was explained by the association between cumulative risk and children's absenteeism in previous grades. Thus, in first grade, differences in absenteeism by cumulative risk disappeared once absenteeism rates in kindergarten were taken into account. In third grade, the relation between absenteeism and cumulative risk appeared to rest on the association between the latter and absenteeism in first grade, specifically being a chronic absentee in this grade. In fifth grade, in turn, differences in absenteeism by cumulative risk were accounted for by the association between the latter and absenteeism in third and first grades, as well as in kindergarten.²⁹

The greater the exposure to cumulative risk, the greater the absenteeism



Children with three or more risks were more likely than their peers without any risks to miss 10 percent or more of the school year. In kindergarten, 21 percent of children with 3 or more risks were chronic absentees, compared to 5 percent of children without risks. This proportion decreased in both first and third grades, only to increase slightly in fifth grade.³⁰

Children exposed to high risk were more likely to be chronic absentees



Conclusion

This report calls attention to the detrimental impact that poverty and other forms of maternal and family risk have, both singly but particularly in combination, on children's early formal education experiences. Findings presented here are consistent with research indicating that it is the cumulative exposure to risk, rather than the additive effect of individual risks, that impacts on children's outcomes.³¹ Like previous studies, this report suggests that children may be able to manage and tolerate the exposure to up to two risks without facing negative consequences for their learning and development.³² However, an increase in exposure from two to three risks appears to be associated with significant problems, specifically in our study, with chronic absenteeism.

The first report in this series ascertained the detrimental effects of chronic absenteeism on academic performance, particularly in kindergarten, when important foundations for future learning and development are established, particularly cognitive and socio-emotional skills and dispositions, as well as an understanding of the student role. The second installment in this series, this report points to the greater likelihood of children exposed to high risk to miss out on a significant part of their schooling experience, thereby compromising the acquisition of these foundational skills and dispositions. It also illustrates the progression of the relation between risk and absenteeism in elementary schooling: as children move through the elementary grades, the impact of cumulative risk on school attendance lessens, only to rise again in the fifth grade, possibly as a result of the greater absenteeism observed in transitional grades, namely kindergarten and fifth grade.³³

Consistent with existing research, this report also finds children vulnerable by virtue of their poverty, racial/ethnic minority, and poor health status to experience greater risk than their affluent, white, and healthy peers.³⁴ Individual risks examined here tended to co-occur in the population studied. Some of these risks – for instance, maternal education – have two-generational implications in that they constitute risks for both children's development and maternal employment.³⁵ The findings presented here point to the urgency to identify and provide supports to vulnerable children early in their formal schooling careers in order to steer them toward successful early learning trajectories. They also highlight the need to examine how protective factors – that is, resources, skills, and abilities of parents, families and communities – can help strengthen children's resiliency in the context of high risk exposure,³⁶ and contribute to early school success.

Endnotes

1. For reviews of this literature, see Crane, D. Russell, & Heaton, Tim B. (2007). *Handbook of Families and Poverty*. (Thousand Oaks, CA: Sage Publications); and Duncan, Greg J., & Brooks-Gunn, Jeanne (1997). *Consequences of Growing Up Poor*. (New York: Russell Sage Foundation).
 2. Boyle, Michael H., Georgiades, Katholiki, Racine, Yvonne, & Mustard, Cameron. (2007). Neighborhood and family influences on educational attainment: Results from the Ontario Child Health Study Follow-Up 2001. *Child Development*, 78(1), 168-189.
 3. See for instance, Ackerman, Brian P., Brown, Eleanor D., & Izard, Carroll E. (2004). The relations between persistent poverty and contextual risks and children's behavior in elementary school. *Developmental Psychology*, 40(3), 367-377; Dearing, Eric, McCartney, Kathleen, & Taylor, Beck A. (2001). Change in family income-to-needs matters more for children with less. *Child Development*, 72(6), 1779-1793.
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 6. See Romero, Marijosé, & Lee, Young-Sun. (2007). *A National Portrait of Chronic Absenteeism in the Early Grades*. New York: National Center for Children in Poverty. <www.nccp.org/publications/pub_771.html>
 7. The Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K), from the National Center for Education Statistics, is a national study following a sample of children who entered kindergarten in 1998, until they reached the fifth grade. The ECLS-K collects data on children's development, family characteristics and functioning, and a host of characteristics in the school environment.
 8. For reviews of this literature, see Crane, D. Russell, & Heaton, Tim B. (2007). *Handbook of Families and Poverty*. (Thousand Oaks, CA: Sage Publications); and Duncan, Greg J., & Brooks-Gunn, Jeanne (1997). *Consequences of Growing Up Poor*. (New York: Russell Sage Foundation).
 9. Family income was approached as an income-to-needs ratio, which is determined by the U.S. Department of Health and Human Services (HHS) on the basis of the total annual family income, the number of adults and children in the family, and how this income compares to the income level below which HHS considers a family of a specific size and child-adult composition to live in poverty. This ratio is adjusted for inflation every year. ECLS-K data contain one variable identifying children who live below the federal poverty level (FPL), but this variable lumps together all income groups above this cut-off. For the purposes of this analysis, income-to-needs ratio groups were calculated based on respondents' annual family income for 1998, when baseline data were collected, as well as family size and the number of children and adults in the family, compared to U.S. Census Bureau, Current Population Survey. (1998). *Poverty thresholds in 1998, by size of family and number of related children under 18 years*. Retrieved September 7, 2006, from <www.census.gov/hhes/poverty/thresh98.html>.
- The current federal poverty level for a family of 4 is \$20,650 in 2007. For more information on measuring poverty, see NCCP's state profiles at <www.nccp.org> and the U.S. Department of Health and Human Services <www.aspe.hhs.gov/poverty/07poverty.shtml>.
10. Teenage mother, $\chi^2=49.87$; single mother, $\chi^2=231.87$; low education, $\chi^2=291.60$; welfare receipt, $\chi^2=313.51$; unemployment, $\chi^2=66.83$; poor health, $\chi^2=80.17$; food insecurity, $\chi^2=152.60$; large family size, $\chi^2=119.05$; all significant at $p<.000$. Similar patterns were found in later grades, but income-based differences were less marked. It is not clear whether these findings result from the greater attrition of poor, low income, and non-white study participants in later grades. Poverty status and welfare receipt were not included in this analysis because of their dependence on income.

11. Households were identified as experiencing food insecurity if either the child or the adults reduced their food intake, skipped meals, and/or went hungry because of food shortage.
12. Poverty, $\chi^2=310.68$; teenage mother, $\chi^2=24.23$; single mother, $\chi^2=195.29$; low education, $\chi^2=174.13$; welfare receipt, $\chi^2=159.46$; unemployment, $\chi^2=19.39$; poor health, $\chi^2=34.4$; food insecurity, $\chi^2=34.32$; large family size, $\chi^2=30.65$, all significant at $p<.000$.
13. Poverty, $\chi^2=22.96$, $df=3$, $p<.000$; single mother, $\chi^2=5.15$, $df=1$, $p<.05$; low education, $\chi^2=13.78$, $df=1$, $p<.001$; welfare receipt, $\chi^2=10.17$, $df=1$, $p<.004$; poor health, $\chi^2=35.74$, $df=1$, $p<.000$; food insecurity, $\chi^2=9.67$, $df=1$, $p<.006$. Teenage mother, unemployment, and large family size were not statistically significant.
14. Risk factors that appeared not to be related to chronic absenteeism in the elementary grades included parent's perceived stress in parenting the child; overall parent stress and wellbeing; negative communication among parents; and little marital satisfaction. These findings may be limited to the ECLS-K sample and the subset used in this study since most of these variables showed little variability.
15. Kindergarten: $\chi^2=68.149$; first grade: $\chi^2=50.27$; third grade: $\chi^2=20.37$; fifth grade: $\chi^2=55.89$, all $df=3$, significant at $p<.000$.
16. Kindergarten: $\chi^2=16.434$, $df=3$, $p<.001$; first grade: $\chi^2=8.98$, $df=3$, $p<.029$; third grade: $\chi^2=19.15$, $df=3$, $p<.000$; fifth grade: $\chi^2=10.66$, $df=3$, $p<.014$.
17. Absenteeism patterns appeared to differ by whether the household was headed by a single mother or a single father, suggesting that children's absenteeism was more severe if they lived in father-only households, as opposed to mother-only households. This finding ought to be taken cautiously since in some grades the number of father-only households in the study subset was small. Therefore, the study focused on mother-only households and father-only households were dropped from the analysis. Kindergarten: $\chi^2=20.24$, $df=3$, $p<.000$; first grade: $\chi^2=24.13$, $df=3$, $p<.000$; third grade: $\chi^2=10.578$, $df=3$, $p<.014$; fifth grade: $\chi^2=19.99$, $df=3$, $p<.000$.
18. Kindergarten: $\chi^2=48.29$; first grade: $\chi^2=57.59$; third grade: $\chi^2=23.37$; fifth grade: $\chi^2=21.34$, all $df=3$, significant at $p<.000$.
19. Kindergarten: $\chi^2=61.28$, $df=3$, $p<.000$; first grade: $\chi^2=36.79$, $df=3$, $p<.000$; third grade: $\chi^2=27.39$, $df=3$, $p<.000$; fifth grade: $\chi^2=11.52$, $df=3$, $p<.009$.
20. Mothers who reported not being in the labor force at the time of the survey were not included in this analysis. Data on fifth grade are not included because of the very small number of unemployed mothers in this grade. Kindergarten: $\chi^2=15.46$, $df=3$, $p<.001$; first grade: $\chi^2=20.06$, $df=3$, $p<.000$; third grade: $\chi^2=8.01$, $df=3$, $p<.05$.
21. Information on parent's health was collected only in kindergarten and third grade. Kindergarten: $\chi^2=22.13$; third grade: $\chi^2=25.54$, both $df=3$, significant at $p<.000$.
22. Data on food insecurity were not available for first grade. Kindergarten: $\chi^2=253.65$, $df=3$, $p<.000$; third grade: $\chi^2=13.97$, $df=3$, $p<.003$; fifth grade: $\chi^2=36.6$, $df=3$, $p<.000$.
23. Kindergarten: $\chi^2=10.87$, $df=3$, $p<.012$; first grade: $\chi^2=12.042$, $df=3$, $p<.007$; third grade: $\chi^2=10.14$, $df=3$, $p<.017$; fifth grade: $\chi^2=10.66$, $df=3$, $p<.014$.
24. See for instance, Gassman-Pines, Anna, & Yoshikawa, Hirokazu. (2006). The effects of anti-poverty programs on children's cumulative level of poverty-related risk. *Developmental Psychology*, 42(6), 981-999.
25. It is important to take into account that the higher attrition over time among low income and minority study participants than among higher income and white study participants.
26. Kindergarten: $\chi^2=1207.36$; first grade: $\chi^2=1841.09$; third grade: $\chi^2=1902.96$; fifth grade: $\chi^2=1026.49$, all $df=9$, significant at $p<.000$. By definition, there were no poor children without any cumulative risk, since poverty status was among the risks considered. Eleven percent of kindergartners faced one risk, poverty alone, whereas 24 percent encountered two risks. Income-based differences in exposure to cumulative risk persisted even after poverty status and welfare receipt were excluded: here, 26 percent of poor kindergartners faced three or more risks, compared to 6 percent or low income children, and less than one percent of middle income and affluent kindergartners (Kindergarten: $\chi^2=707.23$; first grade: $\chi^2=852.96$; third grade: $\chi^2=1011.21$; fifth grade: $\chi^2=479.84$, all $df=9$, significant at $p<.000$.)
27. Kindergarten: $\chi^2=325.28$; first grade: $\chi^2=521.96$; third grade: $\chi^2=629.7$; fifth grade: $\chi^2=322.75$, all $df=6$, significant at $p<.000$.
28. Kindergarten: $\chi^2=27.47$; first grade: $\chi^2=26.25$; third grade: $\chi^2=58.64$; fifth grade: $\chi^2=20.6$, all $df=3$, significant at $p<.000$.
29. Separate regression equations were run for each grade with absenteeism rated as dependent variable and, as predictors, cumulative risk, income-to-needs ration, child race/ethnicity, socioemotional development as rated by teachers, early care and education experience in the year prior to kindergarten, age at kindergarten entrance, gender, health and disability status, and urbanicity, as well as absenteeism rates in previous grades if applicable. For cumulative risk in kindergarten: $\beta = .160$, $t=3.77$, $df=1,288$, significant at $p<.000$. Similar separate equations were run including each individual risk instead of cumulative risk, and all other child characteristics. None of the individual risks reached significance.

30. Kindergarten: $\chi^2=85.56$; first grade: $\chi^2=142.26$; third grade: $\chi^2=34.11$; fifth grade: $\chi^2=29.26$, all $df=9$, significant at $p<.001$.
31. For a review and comparison of the three methods to assess risk – assessing the individual contributions of risks, constructing a cumulative risk index, both of which were used in this study, or computing risk factor scores through factor analysis, see Burchinal, Margaret R., Roberts, Joanne E., Hooper, Stephen, & Zeisel, Susan A. (2000). Cumulative risk and early cognitive development: A comparison of statistical risk models. *Developmental Psychology*, 36(6), 793-807.
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