Double Penalty? : Interaction Between Childhood Health and Parental Earnings

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ABSTRACT
Researchers have shown that lower socioeconomic position in childhood leads to worse health outcomes in adulthood. They have also demonstrated that poor health in childhood leads to disadvantaged socioeconomic position in the adulthood. Our study takes both of these into account and hypothesizes that these two are closely connected via a feedback mechanism, through which poor health in childhood may lead to downward socioeconomic trajectory of the parental household. We use the longitudinal Panel for the Study of Income Dynamics from 1976 to 2009. Preliminary results do not support this hypothesis, and indicate that the trend may be the opposite, with high earning parents reporting taking more time off for caretaking. This invites further analysis and refinement of our theoretical framework.

INTRODUCTION

In the past decade, a wave of scholarship emerged that drew connections between childhood socioeconomic position (SEP) and health during adulthood. Researchers have shown that on the one hand, disadvantaged childhood not only leads to worse chances of accumulating economic resources and human capital, it also negatively influences adult health outcomes independently of these two key factors. On the other hand, researchers have also explored how poor health in childhood may influence SEP in adulthood and have shown mechanisms through which poor health in childhood leads to slower educational progress and ultimately worse labor market position for former sick children. Moreover, children of lower SEP families are more likely to suffer from childhood morbidities, and thus these two hypotheses exist as a close coupling.

To date, neither of these strands of literature has satisfactorily incorporated into their respective theoretical frameworks the feedback loop that likely exists between childhood health and socioeconomic position of the parental household. Having a sick child, especially one that is chronically ill, often means incurring medical expenses while at the same time limiting labor force participation. Parents of frequently or chronically sick children are therefore very vulnerable to experiencing a downward socioeconomic trajectory, subjecting all household members to the risks associated with low SEP. As already mentioned, these include both lower SEP attainment in adulthood on account of childhood illness, and adult morbidities on account of the experienced socioeconomic hardship.

The extant research on this "sick child penalty" has highlighted that parents of sick children, most often the mother, are at risk of withdrawing from the labor force to provide care. Unfortunately, the estimates of maternal labor force reduction on account of caring for a sick child vary widely. For example, Salkever (1982) reports that having a seriously sick child reduces the probability of her mother working by six percent in two-parent households, but found no effect in non-white and female-headed households. In some cases, as in the recent article by Cidav and colleagues (2012) study of the parents of autistic children, the analyses has been extended to included to estimate of the likely parental loss of income due to care. What is, however, still missing from this discussion is a clear theoretical framework of the self-reinforcing mechanisms linking child illness and the socioeconomic position of the parental household that are likely to exist.

Our paper will attempt to make the first empirical steps in this direction by examining whether parents with sick children experience a decline (or slower rate of growth) in socioeconomic position. We will investigate socio-economic dimensions along which these potential effects might be stratified, and also examine the impact of having a sick child on the income trajectory of their household.

DATA AND METHODS

We use The Panel Study of Income Dynamics (PSID) for our analysis. The PSID is the longest running, nationally representative longitudinal household survey in the US. The initial wave consisted of roughly 8000 individuals residing in 5000 households, including an oversample of (predominantly African-American) low-income families. Follow-up interviews were conducted annually until 1997, since which time they have continued on a biennial basis. As its title implies, the focus of the PSID is the employment experiences and income dynamics of the respondent households. As a result we have extensive information on annual labor market participation and subsequent earnings (as well as income from other sources) for households over an extended period of time. Beginning in 1976, employed husbands and wives were both asked if they missed work in order to care for a sick household member. Those who respond in the affirmative are also asked how much time was missed. These questions, together with the available family structure and income information constitute the core of our empirical approach.

PRELIMINARY RESULS

Table 2 presents the results from a preliminary set of regressions in which the natural log of annual income is modeled as a function of parents missing work in order to care for an ill family member. Given that we are interested in the relationship between parental employment and household socio-economic position from the child's perspective, our dataset is constructed at the child level (household members are considered under age 17 are considered children). Because the presence of a chronically ill child affects families in many ways, tracking household income trajectories at this level allows us to incorporate other potential consequences, including marital dissolution. Control variables include the race and gender of the child, the number of siblings and age of the youngest child, the age of the household head (the father by default in two-parent households) and the highest level of education achieved by either parent (high school graduate, some post-secondary experience but less than a four-year degree and at least a four year degree, high school dropouts are the reference group). We also include dummy variables for the child's age as well as the year of the interview.

The first panel reports results from a set of OLS regressions. In each column, the sample is restricted to households in which the indicated parent reported positive employment in the year prior to the interview. As can be seen, in these models, having a parent miss work to care for an ill household member in fact has a positive association on annual income, a 2.1 percent increase among households with a working father and a 7.5 percent increase among those with a working mother. In households with two working parents, the mother effect is dominant.

Because we have repeated measures of income for each child in our sample, we are able to incorporate fixed-effects into our models. In this way we are able to control for unobserved, time invariant factors at the child (and by extension household) level that may bias estimates of the relationship between missing work and income. These results are presented in the second panel and as can be seen, these estimates are very similar to those generated by OLS.

PRELIMINARY CONCLUSIONS & FURTHER ANALYSIS

Our early results indicate that, somewhat counter-intuitively, parents who miss work to care for a sick family member earn higher income than those who do not. This effect is especially consistent for the households where mother missed work to care for a sick family member. In analysis not shown here, we found that this effect persists when we stratify households by the highest educational attainment of the head. This likely indicates that the households where parents take time off to care for their sick children (although they could conceivably be taking care of other family members, such as their own parents) are better off financially than those who do not, and they hold jobs that allow them to take time off.

In order to explore this finding further we intend to take several analytical steps prior to the PAA meetings. First, we will incorporate measures of how much time was missed on account of caring for an ailing family member. Because it may be the case that being able to miss work indicates having a desirable job, family earnings may only become impacted once the amount of time missed reaches a certain threshold, and the relationship may not be linear. Second, it could be the case that loss of employment could be a confounding factor our models have not accounted for thus far. The parents taking time off may be more likely to lose their jobs or exit the labor force and thus our models would be accounting only for a select group of workers. Therefore, we will develop models that incorporate more accurate employment histories and

account for periods of unemployment. Such strategy would also allow us to speak to the debate of when, under what circumstances and with what type of effect on their earnings are people exiting the labor force to care for a relative.

SOURCES

Cidav, Z., S. C. Marcus, and D. S. Mandell. 2012. "Implications of childhood autism for parental employment and earnings." *Pediatrics* 129:617-623.

Salkever, D. S. 1982. "Children's health problems and maternal work status." *J Hum Resour* 17:94-109.

TABLES

Table 1: Descriptive Statistics Children 1-17 in Two-Parent Families
(Observed from Birth)

	Sample	Father Employed	Mother Employed	Both Employed
Total family income (10K, 2009$)	9.055	9.210	9.334	9.425
	(9.447)	(9.508)	(9.215)	(9.240)
Father employed	0.966	1.000	0.974	1.000
Father missed work	0.193	0.199	0.204	0.209
Mother employed	0.718	0.724	1.000	1.000
Mother missed work	0.245	0.250	0.342	0.345
Both employed	0.700	0.724	0.974	1.000
Both missed work	0.088	0.091	0.123	0.126
Gender (female)	0.478	0.477	0.473	0.472
Race (nonwhite)	0.117	0.112	0.119	0.115
Number of siblings	2.314	2.309	2.246	2.244
.	(1.019)	(1.005)	(0.976)	(0.969)
Age youngest child				
Four or younger	0.544	0.546	0.490	0.492
Between 5 and 12	0.364	0.364	0.402	0.402
Thirteen or older	0.091	0.090	0.107	0.106
Father's age				
Twenty-five or younger	0.058	0.059	0.051	0.052
Between 26 and 35	0.398	0.404	0.382	0.385
Between 36 and 50	0.479	0.483	0.506	0.509
Fifty or older	0.064	0.053	0.061	0.054
Parents' education				
Less than high school	0.066	0.059	0.053	0.049
High school graduates	0.278	0.275	0.264	0.262
Some college	0.284	0.286	0.301	0.302
College degree	0.367	0.375	0.377	0.382
Sample size	81,238	77,886	58,476	56,617

Table 2: Y=Log of Total Family Income

	OLS			Fixed Effects		
	(1)	(2)	(3)	(1)	(2)	(3)
Father missed work	0.021**	.	0.008	0.029***	.	0.002
.	(0.009)	.	(0.009)	(0.011)	.	(0.011)
Mother missed work	.	0.075***	0.067***	.	0.047***	0.044***
.	.	(0.009)	(0.009)	.	(0.010)	(0.010)
Gender (female)	-0.004	-0.011	-0.011	.	.	.
.	(0.014)	(0.013)	(0.013)	.	.	.
Race (nonwhite)	-0.097***	-0.049**	-0.037	.	.	.
.	(0.020)	(0.023)	(0.023)	.	.	.
Number of siblings	-0.037***	-0.046***	-0.047***	0.004	-0.008	-0.009
.	(0.007)	(0.007)	(0.007)	(0.009)	(0.013)	(0.013)
Age youngest child						
Four or younger	-0.095***	-0.088***	-0.089***	-0.045*	0.000	-0.010
.	(0.029)	(0.027)	(0.027)	(0.027)	(0.025)	(0.026)
Between five and twelve	-0.040*	-0.036*	-0.033*	-0.007	0.027	0.024
.	(0.022)	(0.020)	(0.020)	(0.023)	(0.023)	(0.023)
Age household head						
Twenty five or less	-0.491***	-0.465***	-0.480***	-0.224***	-0.210***	-0.205***
.	(0.022)	(0.022)	(0.022)	(0.031)	(0.029)	(0.029)
Between 26 and 35	-0.178***	-0.175***	-0.175***	-0.062***	-0.063***	-0.055***
.	(0.012)	(0.013)	(0.013)	(0.017)	(0.017)	(0.017)
Fifty or older	0.015	-0.037	0.009	0.025	-0.011	-0.007
.	(0.023)	(0.024)	(0.024)	(0.027)	(0.027)	(0.028)
Parents' education						
High school graduate(s)	0.284***	0.215***	0.191***	0.024	0.027	0.030
.	(0.025)	(0.028)	(0.027)	(0.056)	(0.053)	(0.055)
Some college	0.517***	0.446***	0.412***	0.126**	0.094*	0.097*
.	(0.025)	(0.028)	(0.026)	(0.056)	(0.055)	(0.057)
College degree	0.868***	0.770***	0.729***	0.247***	0.187***	0.195***
.	(0.026)	(0.029)	(0.028)	(0.067)	(0.065)	(0.067)
Constant	10.829***	10.922***	10.961***	10.895***	10.967***	10.966***
.	(0.046)	(0.049)	(0.048)	(0.094)	(0.099)	(0.101)
R-squared	0.229	0.227	0.225	0.18	0.17	0.17
Sample size	77,884	58,474	56,615	77,884	58,474	56,615
N individuals	.	.	.	5,606	5,272	5,207

All regressions include dummy variables for survey year (1976-2009) and child's age (1-17).
*** p<.01, ** p<.05, * p<.10;