

Early Childhood Poverty and Adult Attainment, Health and BMI

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Early Poverty and Child Development

- ❑ Many studies show poor children do worse across a range of outcomes
- ❑ Far from clear to what extent poverty *itself* is cause of differences between poor and non-poor children, net of correlated family factors
- ❑ Few studies of *adult* impacts of low income very early in life

Theoretical Framework

□ Economics

- Families with higher economic resources purchase/produce important “inputs” into young children’s development
- Human capital accumulation may be best facilitated with early investments

□ Developmental Psychology

- Higher incomes may improve family psychological processes (e.g. parental emotional well-being and parenting)
- Family environment is key during pre-school years

□ Epidemiology/Neuroscience

- Early years may represent a sensitive period during which social processes become embedded in biology

Some stylized facts

- ❑ Larger poverty associations with children's ability and achievement than with behavior, mental health and physical health
- ❑ Largest associations with poverty early versus later in childhood
- ❑ No agreement about causal impacts (e.g. Mayer, 1997; Blau 1999)

Data and Sample

- ❑ Panel Study of Income Dynamics (PSID)
- ❑ Children born between 1968 and 1975
- ❑ Adult outcomes measured between ages 25 and as late as age 37 for the earliest cohort
- ❑ Income measured prenatal to age 15; controls measured around or before birth
- ❑ Use attrition-adjusted weights

Adult Outcomes

□ Achievement

- Completed schooling
- After age 25: annual earnings, annual hours worked

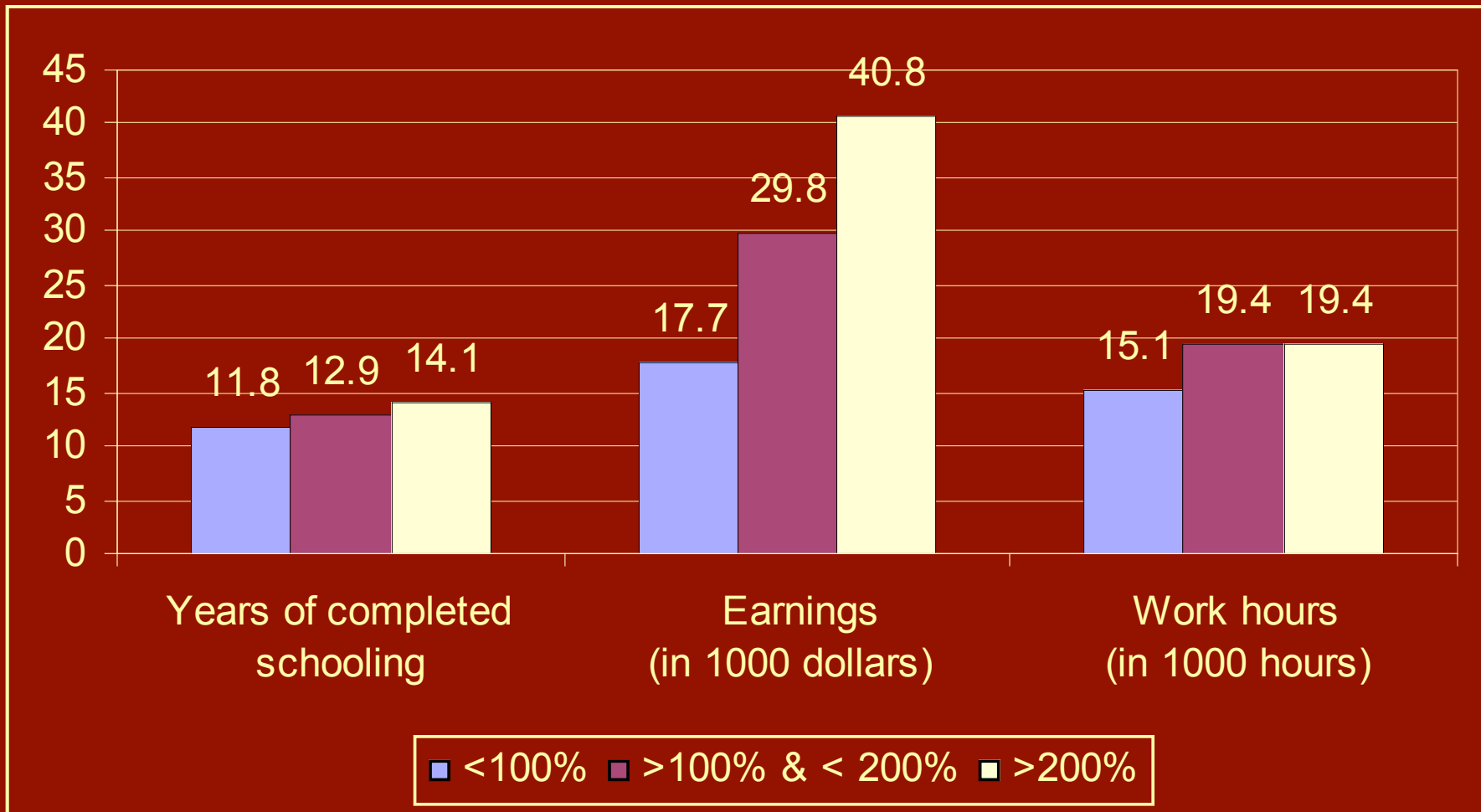
□ Health in 2003 or 2005

- Poor health, high distress, body mass index, overweight

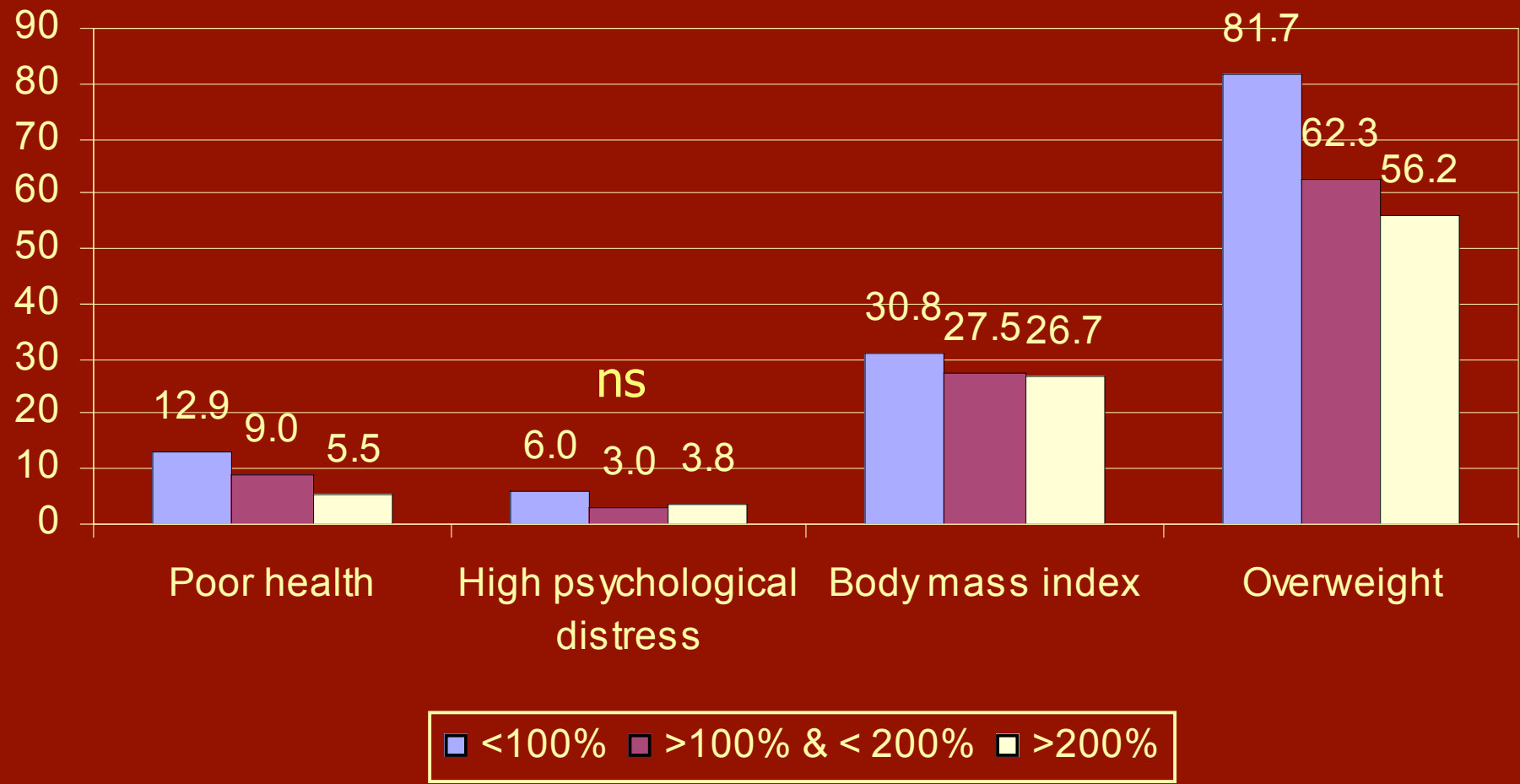
Simple Comparisons

- Compare adult outcomes for children with incomes between the prenatal year and age 5
 - <100% poverty threshold
unweighted n=419
 - Between 100% and 200% poverty threshold
unweighted n=629
 - Over 200% poverty threshold
unweighted n=675

Adult Achievement by P-5 Poverty



Adult Health by P-5 Poverty



Independent Variables

- Average annual income in various childhood periods (2005\$)
 - Prenatal to age 5
 - Age 6 to age 10
 - Age 11 to age 15
- Splines with knot at \$25,000
 - Allows for distinct linear effects for average incomes up to \$25,000 and for incomes \$25,000 and higher
 - Experimentation showed that \$25K best balances sample size and nonlinear effects

Control Variables (all measured around or before birth)

- Birth year dummies
- Race
- Sex
- Child's parents married and living together at birth
- Child lived in the South at birth
- Number of siblings
- Child was first born
- Years of completed schooling of household head at birth
- Household head's score on sentence completion test in 1972
- Dwelling cleanliness (average between 1968 and 1972)
- Parental expectations/horizons index (average between 1968 and 1972)

Ln Earnings regression

Income in \$10,000	<\$25,000	>\$25,000	Sig dif?
Prenatal to age 5	.573** (.158)	.027 (.018)	**
Age 6 to age 10	.082 (.120)	.019 (.021)	ns
Age 11 to age 15	.010 (.098)	.001 (.021)	ns
Equality of 3 <\$25,000 spline segments	$p = .035$	* $p < .05$; ** $p < .01$ All control variables included	

Annual Work Hours

Income in \$10,000	<\$25,000	>\$25,000	Sig dif?
Prenatal to age 5	454.0** (106.7)	16.4 (12.6)	**
Age 6 to age 10	-81.1 (97.2)	11.2 (12.6)	ns
Age 11 to age 15	134.7 (71.3)	-14.9 (11.8)	*
Equality of 3 <\$25,000 spline segments	$p = .007$	* $p < .05$; ** $p < .01$ All control variables included	

Health outcomes

	Poor health		Psychological distress	
	<\$25,000	>\$25,000	<\$25,000	>\$25,000
Income in \$10,000				
Prenatal to age 5	-.021	-.004	-.009	.000
Age 6 to age 10	-.034*	.008	.008	+.005*
Age 11 to age 15	-.014	-.025*	-.018*	-.005*

All control variables included

Adult Body Mass Index

Income in \$10,000	<\$25,000	>\$25,000
Prenatal and birth year	-1.90** (.70)	.05 (.11)
Age 1 to age 5	-.42 (1.59)	-.07 (.10)
Age 6 to age 15	-.56 (1.03)	.02 (.11)

All control variables included

Robustness checks on P-5 <\$25K coefficient

	Ln Earnings	Work hours	BMI
Basic Regression	.57** (.16)	454** (107)	-2.09 (1.53)
Permanent income (prenatal to 15)	.29 (.17)	74 (141)	-.11 (1.26)
Deviation of P-5 from permanent	.46** (.20)	410** (152)	-2.50 (1.77)

Note: All but the last regressions include income in other childhood stages. All include control variables * $p < .05$; ** $p < .01$

Robustness checks on P-5 <\$25K coefficient

	Ln Earnings	Work hours
Basic Regression	.57** (.16)	454** (107)
No controls for later income	.64** (.13)	478** (85)
Exclude mother's income	.33** (.09)	243** (62)
SRC sample only	.42** (.19)	453** (130)
Unweighted	.19* (.10)	188** (81)

Note: All but the second regression include income in other childhood stages. All include control variables * $p < .05$; ** $p < .01$

Accounting for the P-5 Earnings Effect

	Coefficient (SE) on P-5 <\$25,000
Basic Regression	.57** (.16)
Add childhood family structure and maternal work	.57** (.16)
Add child's adult schooling	.53** (.16)
Add adult behavior	.53** (.16)
Add adult health	.54** (.16)
Add adult hours worked	.11 (.11)

Note: * $p < .05$; ** $p < .01$

BMI mediator models

- Birth weight (maternal recall of whether low birthweight)
 - Adding birth weight does little to $< \$25K$ coefficient
 - Birth weight not predictive of adult BMI
- Food expenditures in prenatal and birth years
 - Predicted (modestly) by income but not predictive of adult BMI
- Adult smoking, drinking, exercise, self-reported overall health, activities of daily living, schooling, and labor-market earnings
 - All related to childhood income, but not uniquely to prenatal and birth year income

Sibling models for P-5 Earnings Effect

	Coefficient (SE) on P-5 <\$25,000
Full sample (n=1084)	.57** (.16)
Sibling sample; no fixed effects (n=510)	.91** (.24)
Sibling sample; fixed effects	.48 (1.08)

Note: All regressions include income in other childhood stages and control variables * $p < .05$; ** $p < .01$

Summary

- ❑ Significant adverse impacts of early poverty on achievement-related outcomes
 - Adult earnings, work hours, and program participation
 - Earnings differences are mostly an hours worked difference
- ❑ Significant detrimental impact of very early poverty (prenatal and birth) on body mass index
- ❑ No association between early poverty and: adult behavior outcomes and most health outcomes

Policy considerations

- Earnings coefficients imply:
 - \$3,000 increase in income for 7 years between prenatal and 5th birthday year is associated with:
 - 19% higher adult earnings
 - 135 more work hours per year
- Concentrate income transfers (e.g., child tax credit) on the p-5 periods?
 - E.g., French have a generous program for single mothers that ends at age 3