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Poverty and Student Outcomes:

Disentangling the Effects of Student and School Poverty

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University of Maryland, School of Social Work

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Introductions and Acknowledgements

- About the presenters:
  - ***Bess A. Rose***, Ed.D., is a member of the Research Branch at the MLDS Center and statistician at the University of Maryland School of Social Work (SSW).
  - ***Dawnsha R. Mushonga***, Ph.D., LCPC, ACS, NCC, is a member of the Research Branch at the MLDS Center and post-doctoral researcher at the University of Maryland SSW.
  - ***Angela K. Henneberger***, Ph.D., is director of the Research Branch at the MLDS Center and Research Assistant Professor at the University of Maryland SSW.
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Overview

- Background and policy relevance
- Measuring student and school ~~SES~~ poverty
- Cohort and outcomes
- Effects of student and school poverty

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Background and policy relevance

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Background and policy relevance

- Request from State Senator Bill Ferguson: How does the socio-economic status (SES) of a school's student population impact student outcomes? Do student outcomes change as the SES of the student population at a school changes?
- Current state education funding formula provides additional funds for students in poverty
- Under consideration is giving additional state funding for schools with high concentrations of poverty (Kirwan Commission is drafting recommendations)
- Recent study recommended no changes to current linear formula, but advocacy groups and stakeholders pushing for additional resources

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Poverty

- *Definition*: Residing in a household with a total income below the poverty threshold.
- In 2017, the poverty threshold for a family of four, including two children, was $24,858.
- According to the National Center for Children in Poverty, 21% of children (15 million) live below the poverty threshold.

Sources: U.S. Census Bureau, 2018; Jiang, Granja, & Koball, 2017; U.S. Census Bureau, 2017.

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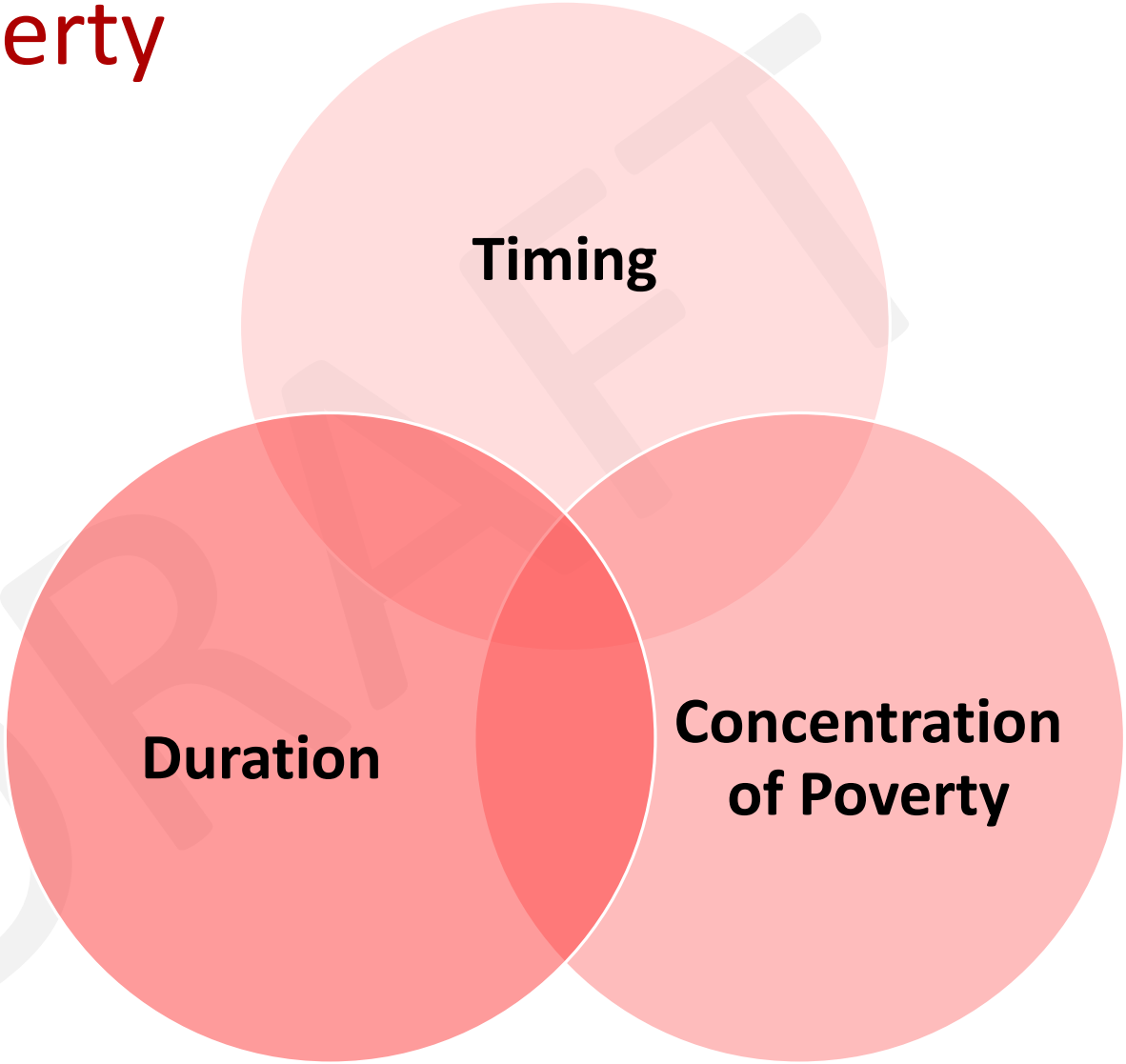
Impact of Poverty



Source: Chaudry & Wimer, 2016.

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Characteristics associated with living in poverty

- Reside in poor neighborhoods
- High exposure to crime and violence
- High levels of food insecurity
- Attend low-quality schools
- Multiple transitions (school and family)
- High rates of incarceration
- High rates of teen pregnancy
- Remain in poverty in adulthood
- Poor developmental outcomes (cognitive, emotional, physical)
- Poor academic achievement
- Less likely to graduate
- Earn lower wages
- Unemployment

Sources: Chaudry & Wimer, 2016; Crosnoe, 2009; Wagmiller & Adelman, 2009.

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Federal funding to counteract effects of poverty in schools: Title I

- All schools with 40% or higher poverty rates are *eligible* for schoolwide Title I programs; schools with 35% or higher are *eligible* for targeted assistance Title I programs
- **But there are not enough Title I funds to serve all eligible schools**
  - School districts allocate funding to eligible schools using strict guidelines
  - Poorest schools must be served first
  - Some districts group by grade span and serve elementary and/or middle schools first
- In 2015-16, 26% of all schools in MD had Schoolwide Title I programs.

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Example of Title I schools in one district (2016)

LEA	School	Pct FARMS	Title I Status
05	Federalsburg Elementary School	0.77	Schoolwide
05	Greensboro Elementary School	0.71	Schoolwide
05	Colonel Richardson Middle School	0.57	Not Title I
05	Colonel Richardson High School	0.53	Not Title I
05	Denton Elementary School	0.51	Schoolwide
05	Lockerman Middle School	0.50	Not Title I
05	North Caroline High School	0.49	Not Title I
05	Ridgely Elementary School	0.48	Schoolwide
05	Preston Elementary School	0.48	Schoolwide

Sources: MSDE website; Common Core of Data.

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Research questions

- What is the effect of individual student poverty on student outcomes (on-time high school graduation , ever graduating from high school, dropping out of school, HSA Algebra score, SAT Math score, enrolling in postsecondary within 1 year of on-time HS graduation)?
- Does school poverty context have an effect on outcomes even after controlling for individual student poverty?
- How do student and school poverty interact? Does individual poverty have a larger impact as school poverty increases?
- How do the effects of student and school poverty vary based on school Title I status?

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Measuring student and school ~~SES~~ poverty

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Measuring student ~~SES~~ poverty

- We only have eligibility for National School Lunch Program (*free* and *reduced-price* meals = FARMS)
  - *Free*: household income at or below 130% of federal poverty level (family of 4: current max $31,980)
  - *Reduced-price*: 130%-185% of federal poverty level (family of 4: current max $45,510)
  - Original data have 3 categories (*Free*, *Reduced*, and *Not eligible*) but we only have *Eligible* (includes *free* and *reduced*) or *Not eligible*

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Measuring student ~~SES~~ poverty, cont'd

- Only families that chose to apply (false negatives)
- Community eligibility since 2012 means entire schools get FARMS (false positives)
- Eligible means household income was below 185% of the federal poverty level
  - Unless (after 2012) whole school = Y
- Not eligible means either household income was above 185% of poverty, OR income was below 185% of poverty but they didn't apply
  - High school students tend not to apply
- Time-varying – associated with each school enrollment

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Measuring student and school poverty

- Student:
  - **FARMS status**: as of last school enrollment (point in time)
  - **FARMS history**: proportion of time student was FARMS across all school enrollment records
- School:
  - **Percent FARMS** (usual measure)
  - **Mean proportion of time FARMS**

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Last FARMS status vs. FARMS history

	FARMS status at last enrollment					
FARMS history	**Missing**		**Not eligible**		**Eligible**	
	N	**%**	**N**	**%**	**N**	**%**
Never	46	<1%	27,820	51%	0	0%
Sometimes, <50%	28	<1	3,985	7	1,986	4
Sometimes, >=50%	153	<1	3,653	7	6,408	12
Always	0	0	0	0	10,386	19

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Cohort and outcomes

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Cohort and outcomes

- Cohort: All 6th graders in 2007-08 in all Maryland public schools who did not transfer out of Maryland public schools (N = 54,465)
- Outcomes for today:
  - On-time high school graduation
  - Ever graduating from high school
  - Dropping out of school
  - HSA Algebra score
  - SAT Math score
  - Enrolling in postsecondary within 1 year of on-time HS graduation
- Outcomes for future presentation:
  - Wages earned

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Mean outcomes by student's FARMS history

FARMS history	HS grad on time (n = 54,465)	HS grad ever (n = 54,465)	Dropout (n = 54,465)	HSA Algebra score (n = 52,261)	SAT Math score (n = 33,534)	Enroll in PS w/in 1yr of on-time HS grad (n = 46,581)
Never	0.95	0.97	0.03	448	543	0.83
<50%	0.83	0.88	0.11	429	449	0.64
>=50%	0.69	0.77	0.21	419	414	0.59
Always	0.76	0.82	0.17	418	406	0.56
All	**0.86**	**0.89**	**0.10**	**435**	**496**	**0.73**

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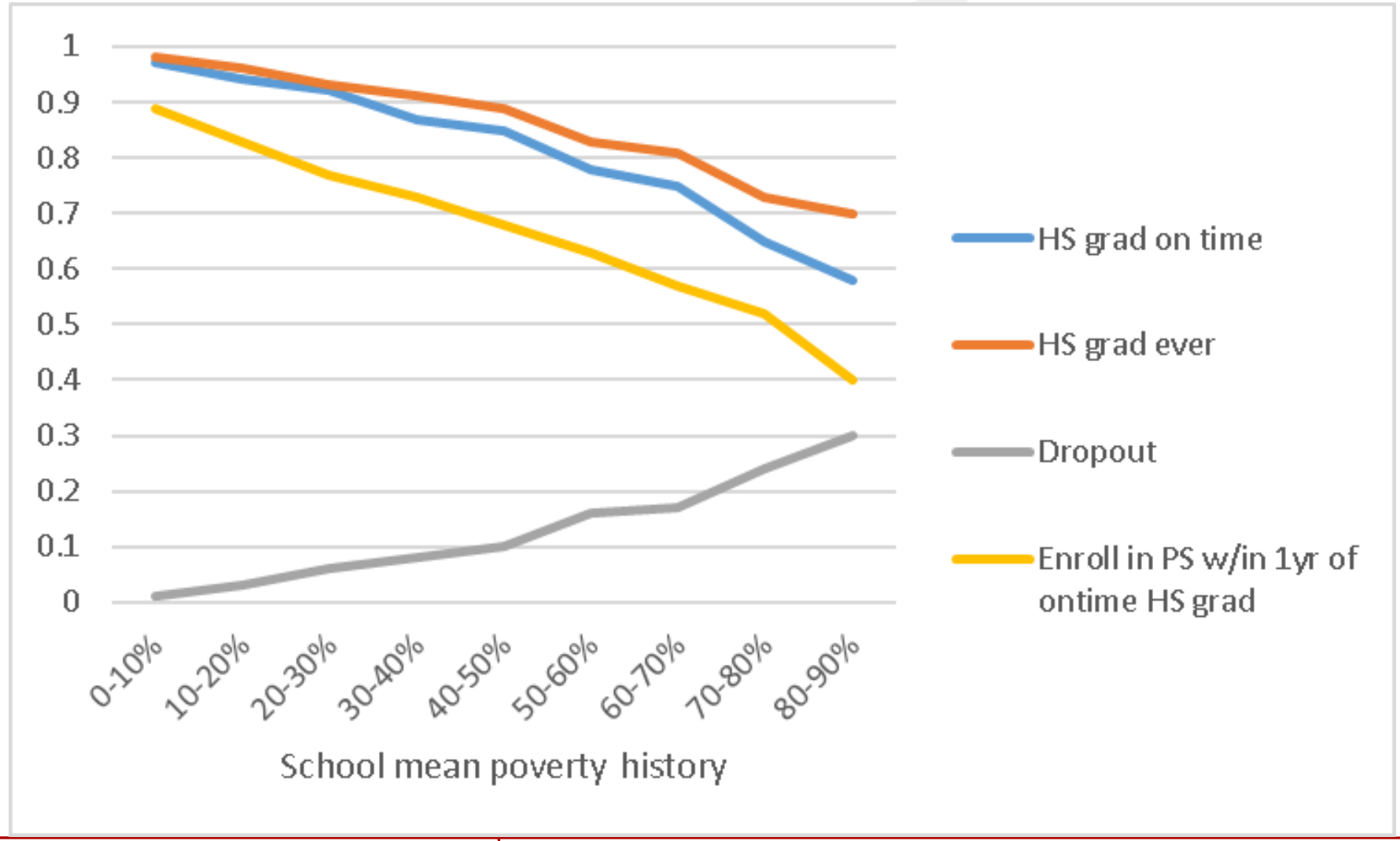
Event outcomes by school mean poverty history



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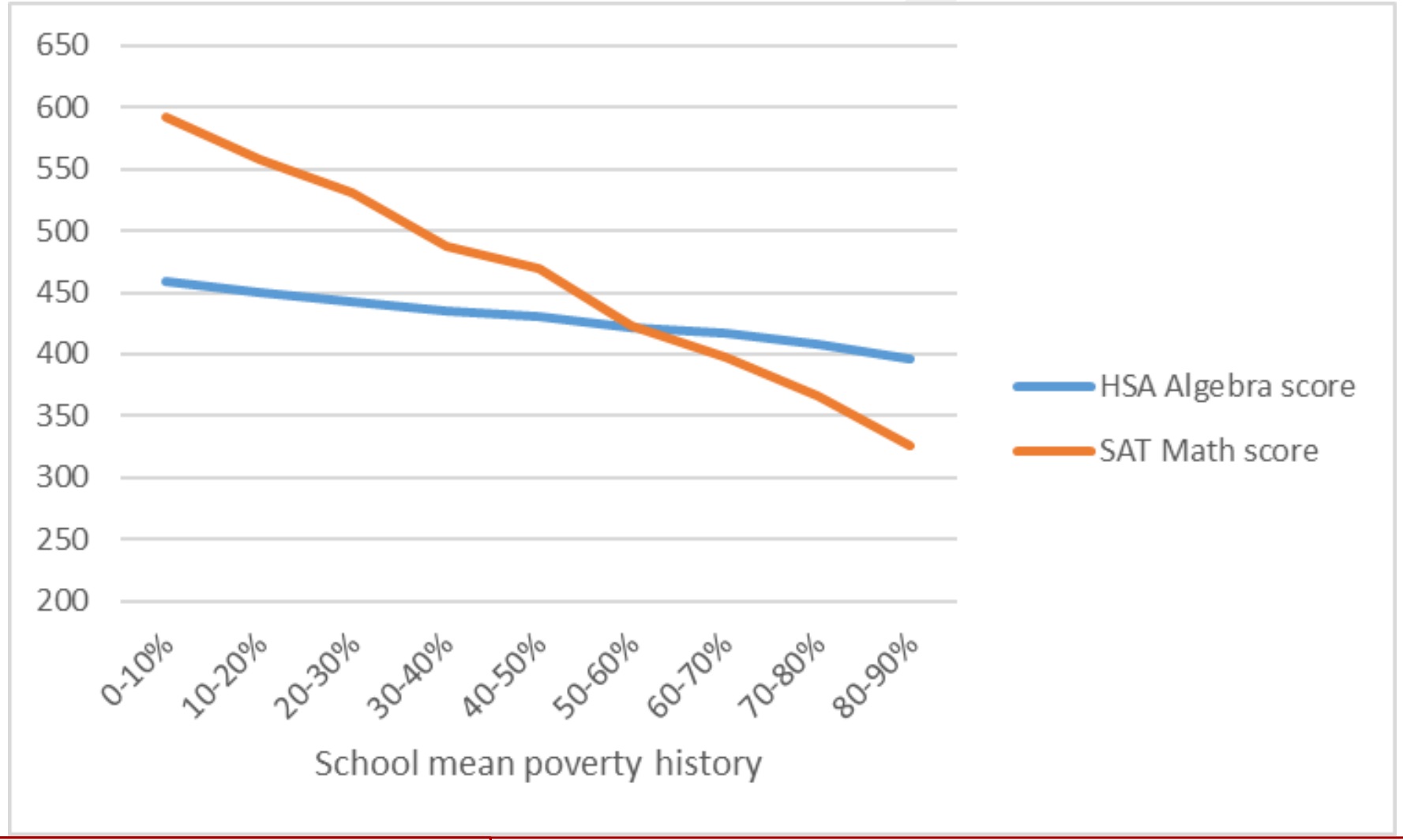
Score outcomes by school mean poverty history



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Mean poverty history by Schoolwide Title I status

		Schoolwide Title I status		
	All	Not eligible (FARMS < 40%)	Eligible (FARMS >= 40%) but no funding	Eligible (FARMS >= 40%) with funding
Student proportion of time FARMS	0.36 (0.42)	0.19 (0.34)	0.51 (0.42)	0.78 (0.29)
School mean proportion of time FARMS	0.37 (0.22)	0.21 (0.11)	0.52 (0.09)	0.72 (0.12)

Note. Standard deviations are in parentheses.

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Mean outcomes by Schoolwide Title I status

	Schoolwide Title I status		
Outcome	Not eligible (FARMS < 40%)	Eligible (FARMS >= 40%) but no funding	Eligible (FARMS >= 40%) with funding
Graduate from HS on time	0.92	0.82	0.64
Ever graduate from HS	0.94	0.87	0.73
Drop out of high school	0.05	0.12	0.25
HSA Algebra Score	446	426	408
SAT Math Score	540	443	372
Enroll in postsecondary within 1 year of graduating from HS on time	0.80	0.65	0.50

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Effects of student and school poverty

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General analytic approach

- Used multilevel models to account for clustering of students within schools, using multiple membership to account for all schools attended grades 6-12
- Estimated independent main effects of student and school poverty on each outcome (student poverty was grand-mean centered)
- Calculated effect size (Cohen's *d*) to standardize size of coefficient relative to distribution of outcome variable to allow for comparison across outcomes
- Estimated interaction in separate analyses (student poverty was group-mean centered)
- Estimated student and school poverty main effects for each Title I group separately

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A note about regression vs. multilevel analysis

- About a third of the variation in outcomes is due to differences between schools, with two-thirds due to differences between students
- Regression analyses attribute variation to students that is actually due to differences between schools

Outcome	Level	Proportion of variation in outcome
HSA Algebra	School	0.33
	Student	0.67
SAT Math	School	0.32
	Student	0.68

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Student vs. school poverty

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Research questions

- What is the effect of individual student poverty on student outcomes (on-time high school graduation, ever graduating from high school, dropping out of school, HSA Algebra score, SAT Math score, enrolling in postsecondary within one year of on-time HS graduation)?
- Does school poverty context have an effect on outcomes even after controlling for individual student poverty?

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Results summary

- Overall, the effects of individual student poverty on student outcomes are *negative* and *substantial*
- There is an independent effect of school poverty context even controlling for student poverty

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Models for continuous outcomes (e.g. HSA score)

Level one: individuals

$$Y_{i\{j\}} = \beta_{0\{j\}} + \beta_{1\{j\}}\text{Poverty}_{i\{j\}} + e_{i\{j\}}$$

Level two: school(s) {j}

$$\beta_{0\{j\}} = \gamma_{00} + \gamma_{01}\text{MeanPoverty}_{\{j\}} + \Sigma_{h\in\{j\}}w_{ih}u_{0h0}$$

$$\beta_{1\{j\}} = \gamma_{10}$$

$$\beta_{2\{j\}} = \gamma_{20}$$

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Models for binary outcomes (e.g. graduation)

Level one: individuals

Log odds $Y_{i\{j\}} = \beta_{0\{j\}} + \beta_{1\{j\}}\text{Poverty}_{i\{j\}}\ e_{i\{j\}}$

Level two: school(s) {j}

$\beta_{0\{j\}} = \gamma_{00} + \gamma_{01}\text{MeanPoverty}_{\{j\}} + \Sigma_{h\in\{j\}}w_{ih}u_{0h0}$

$\beta_{1\{j\}} = \gamma_{10}$

$\beta_{2\{j\}} = \gamma_{20}$

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Effects of student and school poverty: HSA Algebra score

(Mean: 435.30 SD: 31.67 n: 52,261)	β	SE	Sig	Predicted	ES
Intercept	432.07	0.70	***	432	
Student poverty main effect	-6.40	0.14	***	426	0.20
School poverty main effect	**-12.31**	0.58	***	420	**0.39**

Notes. *Intercept* is the predicted outcome for an average student in an average school. *Student poverty main effect* is the predicted difference in outcome for a student whose poverty history is 1 standard deviation (SD) above average (FARMS 78% of the time). A student with high poverty history is predicted to score 6 points (one-fifth of a SD) lower than a student with average poverty history at the same school. *School poverty main effect* is the predicted difference in outcome for a student at a school whose mean poverty history is 1 SD above average (where the average student is FARMS 59% of the time). A student at a high-poverty school is predicted to score 12 points (two-fifths of a SD) lower than a similar student at an average poverty school. **Bold** indicates that the student and school poverty main effects are statistically significantly different from one another. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance. Predicted: Predicted outcome. ES: Effect size.

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Effects of student and school poverty: SAT Math score

(Mean: 495.80 SD: 129.70 n: 33,534)	β	SE	Sig	Predicted	ES
Intercept	474.79	2.76	***	475	
Student poverty main effect	-25.21	0.69	***	450	0.19
School poverty main effect	**-54.43**	2.49	***	420	**0.42**

Notes. *Intercept* is the predicted outcome for an average student in an average school. *Student poverty main effect* is the predicted difference in outcome for a student whose poverty history is 1 standard deviation (SD) above average (FARMS 78% of the time). A student with high poverty history is predicted to score 25 points (one-fifth of a SD) lower than a student with average poverty history at the same school. *School poverty main effect* is the predicted difference in outcome for a student who attends a school whose mean poverty history is 1 SD above average (where the average student is FARMS 59% of the time). A student at a high-poverty school is predicted to score 54 points (two-fifths of a SD) lower than a similar student at an average poverty school. **Bold** indicates that the student and school poverty main effects are statistically significantly different from one another. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance. Predicted: Predicted outcome. ES: Effect size.

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Effects of student and school poverty: On-time HS graduation

(Mean: 0.86 Std. Dev.: 0.35 n: 54,465)	β	SE	Sig	OR	Predicted	ES
Intercept	1.99	0.13	***	7.32	88.0%	
Student poverty main effect	-0.54	0.02	***	0.58	81.0%	0.20
School poverty main effect	**-0.86**	0.10	***	0.42	75.6%	**0.35**

Notes. *Intercept* is the predicted outcome for an average student in an average school. *Student poverty main effect* is the predicted difference in outcome for a student whose poverty history is 1 standard deviation (SD) above average (FARMS 78% of the time). The likelihood of a student with high poverty history is predicted to be 7 percentage points (one-fifth of a SD) lower than a student with average poverty history at the same school. *School poverty main effect* is the predicted difference in outcome for a student who attends a school whose mean poverty history is 1 SD above average (where the average student is FARMS 59% of the time). The likelihood of a student at a high-poverty school is predicted to be 12 percentage points (one-third of a SD) lower than a similar student at an average poverty school. **Bold** indicates that the student and school poverty main effects are statistically significantly different from one another. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance. OR: Odds ratio. Predicted: Predicted outcome. ES: Effect size.

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Effects of student and school poverty: Enrolling in postsecondary within one year of on-time HS graduation

(Mean: 0.73 Std. Dev.: 0.44 n: 46,581)	β	SE	Sig	OR	Predicted	ES
Intercept	0.94	0.04	***	2.56	71.9%	
Student poverty main effect	*-0.41*	0.01	***	0.66	62.9%	*0.20*
School poverty main effect	*-0.46*	0.04	***	0.63	61.8%	*0.23*

Notes. *Intercept* is the predicted outcome for an average student in an average school. *Student poverty main effect* is the predicted difference in outcome for a student whose poverty history is 1 standard deviation (SD) above average (FARMS 78% of the time). The likelihood of a student with high poverty history is predicted to be 9 percentage points (one-fifth of a SD) lower than a student with average poverty history at the same school. *School poverty main effect* is the predicted difference in outcome for a student who attends a school whose mean poverty history is 1 SD above average (where the average student is FARMS 59% of the time). The likelihood of a student at a high-poverty school is predicted to be 10 percentage points (one-fifth of a SD) lower than a similar student at an average poverty school. *Italics* indicate that the student and school poverty main effects are not statistically different from one another. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance. OR: Odds ratio. Predicted: Predicted outcome. ES: Effect size.

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Effects of student and school poverty: Ever graduating from high school

(Mean: 0.89 Std. Dev.: 0.31 n: 54,465)	β	SE	Sig	OR	Predicted	ES
Intercept	2.19	0.09	***	8.95	90.0%	
Student poverty main effect	*-0.53*	0.02	***	0.59	84.1%	*0.19*
School poverty main effect	*-0.39*	0.08	***	0.68	85.8%	*0.13*

Notes. *Intercept* is the predicted outcome for an average student in an average school. *Student poverty main effect* is the predicted difference in outcome for a student whose poverty history is 1 standard deviation (SD) above average (FARMS 78% of the time). The likelihood of a student with high poverty history is predicted to be 6 percentage points (one-fifth of a SD) lower than a student with average poverty history at the same school. *School poverty main effect* is the predicted difference in outcome for a student who attends a school whose mean poverty history is 1 SD above average (where the average student is FARMS 59% of the time). The likelihood of a student at a high-poverty school is predicted to be 4 percentage points (one-tenth of a SD) lower than a similar student at an average poverty school. *Italics* indicate that the student and school poverty main effects are not statistically different from one another. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance. OR: Odds ratio. Predicted: Predicted outcome. ES: Effect size.

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Effects of student and school poverty: Dropping out of school

(Mean: 0.10 Std. Dev.: 0.30 n: 54,465)	β	SE	Sig	OR	Predicted	ES
Intercept	-2.55	0.10	***	0.08	7.2%	
Student poverty main effect	*0.55*	0.02	***	1.74	11.9%	*0.16*
School poverty main effect	*0.41*	0.07	***	1.51	10.5%	*0.11*

Notes. *Intercept* is the predicted outcome for an average student in an average school. *Student poverty main effect* is the predicted difference in outcome for a student whose poverty history is 1 standard deviation (SD) above average (FARMS 78% of the time). The likelihood of a student with high poverty history is predicted to be 5 percentage points (one-sixth of a SD) higher than a student with average poverty history at the same school. *School poverty main effect* is the predicted difference in outcome for a student who attends a school whose mean poverty history is 1 SD above average (where the average student is FARMS 59% of the time). The likelihood of a student at a high-poverty school is predicted to be 4 percentage points (one-tenth of a SD) higher than a similar student at an average poverty school. *Italics* indicate that the student and school poverty main effects are not statistically different from one another. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance. OR: Odds ratio. Predicted: Predicted outcome. ES: Effect size.

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Summary of effect sizes of student and school poverty

Outcome	Student poverty ES	School contextual ES
HSA Algebra Score	0.20 (-)	**0.39 (-)**
SAT Math Score	0.19 (-)	**0.42 (-)**
Graduate from HS on time	0.20 (-)	**0.35 (-)**
Enroll in postsecondary within 1 year of graduating from HS on time	*0.20 (-)*	*0.23 (-)*
Ever graduate from HS	*0.19 (-)*	*0.13 (-)*
Drop out of high school	*0.16 (+)*	*0.11 (+)*

Notes. ES: Effect size. (-): Direction of effect is negative. (+): Direction of effect is positive. **Bold** indicates that the student and school poverty main effects are statistically significantly different from one another. *Italics* indicate that the student and school poverty main effects are not statistically different from one another.

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Interactions

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Research questions, continued

- How do student and school poverty interact? Does individual poverty have a larger impact as school poverty increases?

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Results summary, continued

- Interaction results indicated that some effects of student poverty appear to be *lessened* at higher levels of school poverty

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Models for continuous outcomes (e.g. HSA score) with interactions

Level one: individuals

$$Y_{i\{j\}} = \beta_{0\{j\}} + \beta_{1\{j\}}\text{Poverty}_{i\{j\}} + \beta_{2\{j\}}\text{PovertyxMeanPoverty}_{i\{j\}} + e_{i\{j\}}$$

Level two: school(s) {j}

$$\beta_{0\{j\}} = \gamma_{00} + \gamma_{01}\text{MeanPoverty}_{\{j\}} + \Sigma_{h\in\{j\}}w_{ih}u_{0h0}$$

$$\beta_{1\{j\}} = \gamma_{10}$$

$$\beta_{2\{j\}} = \gamma_{20}$$

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Models for binary outcomes (e.g. graduation) with interactions

<u>Level one: individuals</u>

$$\text{Log odds } Y_{i\{j\}} = \beta_{0\{j\}} + \beta_{1\{j\}}\text{Poverty}_{i\{j\}} + \beta_{2\{j\}}\text{PovertyxMeanPoverty}_{i\{j\}} + e_{i\{j\}}$$

<u>Level two: school(s) {j}</u>

$$\beta_{0\{j\}} = \gamma_{00} + \gamma_{01}\text{MeanPoverty}_{\{j\}} + \Sigma_{h\in\{j\}}w_{ih}u_{0h0}$$

$$\beta_{1\{j\}} = \gamma_{10}$$

$$\beta_{2\{j\}} = \gamma_{20}$$

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Interaction of student and school poverty: HSA Algebra score

(Mean: 435.30 Std. Dev.: 31.67 n: 52,261)	β	SE	Sig
Intercept	432.01	0.81	***
Coefficient for student poverty	-5.71	0.12	***
Coefficient for school poverty	-15.88	0.62	***
Interaction of student and school poverty	2.32	0.15	***

Notes. The coefficients for student and school poverty should not be interpreted as main effects. Because the interaction models used group-mean centering, the coefficient for school poverty reflects both the school poverty effect and the student poverty effect. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance.

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Interaction of student and school poverty: SAT Math score

(Mean: 495.80 Std. Dev.: 129.70 n: 33,534)	β	SE	Sig
Intercept	473.73	2.70	***
Coefficient for student poverty	-23.95	0.61	***
Coefficient for school poverty	-67.74	2.30	***
Interaction of student and school poverty	11.58	0.75	***

Notes. The coefficients for student and school poverty should not be interpreted as main effects. Because the interaction models used group-mean centering, the coefficient for school poverty reflects both the school poverty effect and the student poverty effect. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance.

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Interaction of student and school poverty: On-time HS graduation

(Mean: 0.86 Std. Dev.: 0.35 n: 54,465)	β	SE	Sig
Intercept	1.99	0.11	***
Coefficient for student poverty	-0.51	0.01	***
Coefficient for school poverty	**-1.23**	0.07	***
Interaction of student and school poverty	0.24	0.02	***

Notes. The coefficients for student and school poverty should not be interpreted as main effects. Because the interaction models used group-mean centering, the coefficient for school poverty reflects both the school poverty effect and the student poverty effect. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance.

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Interaction of student and school poverty: Enrolling in postsecondary within one year of on-time HS graduation

(Mean: 0.73 Std. Dev.: 0.44 n: 46,581)	β	SE	Sig
Intercept	0.96	0.04	***
Coefficient for student poverty	-0.37	0.01	***
Coefficient for school poverty	-0.70	0.04	***
Interaction of student and school poverty	0.18	0.01	***

Notes. The coefficients for student and school poverty should not be interpreted as main effects. Because the interaction models used group-mean centering, the coefficient for school poverty reflects both the school poverty effect and the student poverty effect. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance.

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Interaction of student and school poverty: Ever graduating from high school

(Mean: 0.89 Std. Dev.: 0.31 n: 54,465)	β	SE	Sig
Intercept	2.22	0.10	***
Coefficient for student poverty	-0.50	0.02	***
Coefficient for school poverty	-0.73	0.06	***
Interaction of student and school poverty	0.24	0.02	***

Notes. The coefficients for student and school poverty should not be interpreted as main effects. Because the interaction models used group-mean centering, the coefficient for school poverty reflects both the school poverty effect and the student poverty effect. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance.

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Interaction of student and school poverty: Dropping out of school

(Mean: 0.10 Std. Dev.: 0.30 n: 54,465)	β	SE	Sig
Intercept	-2.56	0.08	***
Coefficient for student poverty	0.53	0.02	***
Coefficient for school poverty	0.76	0.07	***
Interaction of student and school poverty	-0.24	0.02	***

Notes. The coefficients for student and school poverty should not be interpreted as main effects. Because the interaction models used group-mean centering, the coefficient for school poverty reflects both the school poverty effect and the student poverty effect. *** $p < .001$. β: Unstandardized coefficient. SE: Standard error. Sig: Statistical significance.

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Title I results

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Research questions, continued

- How do the effects of student and school poverty vary based on school Title I eligibility and funding?

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Results summary, continued

- Title I funding appears to significantly compensate for student poverty when it comes to academic outcomes
- Student poverty has the largest (detrimental) effect in schools that are *not eligible for Title I*

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Effect sizes of **student** poverty by Schoolwide Title I status

Outcome	All schools	Schoolwide Title I Status		
		Not eligible (FARMS < 40%)	Eligible (FARMS >= 40%) but no funding	Eligible (FARMS >= 40%) with funding
HSA Algebra Score	0.20 (-)	0.28 (-)	0.18 (-)	0.06 (-)
SAT Math Score	0.19 (-)	0.28 (-)	0.17 (-)	0.07 (-)
Graduate from HS on time	0.20 (-)	0.53 (-)	0.21 (-)	0.03 (-)
Enroll in postsecondary within 1 year of graduating from HS on time	0.20 (-)	0.31 (-)	0.15 (-)	0.07 (-)
Ever graduate from HS	0.19 (-)	0.42 (-)	0.22 (-)	0.01 (-)
Drop out of high school	0.16 (+)	0.36 (+)	0.22 (+)	0.02 (+)

Notes. (-): Direction of effect is negative .(+): Direction of effect is positive. Grey indicates not statistically significantly different from zero.

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Effect sizes of **school** poverty by Schoolwide Title I status

Outcome	All schools	Schoolwide Title I Status		
		Not eligible (FARMS < 40%)	Eligible (FARMS >= 40%) but no funding	Eligible (FARMS >= 40%) with funding
HSA Algebra Score	0.39 (-)	0.57 (-)	0.39 (-)	0.35 (-)
SAT Math Score	0.42 (-)	0.60 (-)	0.47 (-)	0.38 (-)
Graduate from HS on time	0.35 (-)	1.41 (-)	0.27 (-)	0.31 (-)
Enroll in postsecondary within 1 year of graduating from HS on time	0.23 (-)	0.14 (-)	0.07 (-)	0.09 (-)
Ever graduate from HS	0.13 (-)	0.47 (-)	0.05 (+)	0.15 (-)
Drop out of high school	0.11 (+)	0.37 (+)	0.11 (-)	0.11 (+)

Notes. (-): Direction of effect is negative .(+): Direction of effect is positive. Grey indicates not statistically significantly different from zero.

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Next Steps

- Examine the associations between student and school poverty and workforce outcomes
- Examine additional protective effects that mitigate the negative role of poverty
- Publish research report to website

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Questions and Suggestions?