

How Justice System Involvement Impacts Educational Outcomes in Maryland

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Motivation

- Youth interact with many institutions in their lives, including the education and justice systems
- Prior research suggests that there is an association between lower educational attainment and involvement in the criminal justice system in adulthood (e.g., Pettit & Western, 2004)
 - Possible that this relationship could begin in adolescence
- Early justice system involvement could be a reason why some youth experience worse educational outcomes
 - Early evidence suggests negative association between justice system involvement and educational attainment (e.g., Kirk & Sampson, 2013)

Background – Cumulative Disadvantage

- Cumulative disadvantage (Sampson & Laub, 1997)



- Structural barriers to participating in prosocial institutions due to justice system involvement
 - Disruption of bonds to school
 - Stigma from teachers and administrators (Sinclair et al., 2017)
 - Ineffective transitions from justice system facilities (Cole & Cohen, 2013)
 - Absence
- This could depend on one's individual characteristics and educational environment

Background - Absence

- Justice-involved youth more likely to miss school than their peers (Mark, Geller, & Engberg, 2022)
- Justice system involvement can induce some absence from school directly (i.e., court appearances or incarceration)
- May also increase further absences indirectly
 - Emotional distress
 - Loss of positive relationships
 - Exclusionary discipline

Background – Differences by Race and Sex

Differential involvement

Disparities will occur because some youth more likely to be justice-involved than others

Black and Hispanic youth more likely to be involved in system (Bishop & Frazier, 1988; Fagan et al., 1987)

Boys more likely to be involved in system

Differential impact

The impact of justice system involvement on education will differ between youth of different identities

Race

Compounding stigmatization

Lessening of labeling effects (Hirschfield, 2018)

Sex

Paternalizing (MacDonald & Chesney-Lind, 2001)

Violating type-scripts (Sealock & Simpson, 1998)

Research Questions

What is the relationship between justice system involvement and educational outcomes?

1. Do justice-involved youth differ in key educational outcomes from their peers?

H1: Justice-involved youth will experience worse educational outcomes from their peers and will differ by a student's school district.

2. Does school absence moderate the relationship between justice system involvement and educational outcomes, and does justice system involvement moderate the relationship between absence and educational outcomes?

H2: Youth who miss more school due to justice system involvement will experience stronger impacts than other justice-involved youth. Additionally, the impact of school absence will be worse for youth who are justice-involved.

3. Does the relationship between justice system involvement and educational outcomes vary for individuals of different racial identities and sexes?

H3: The impact of justice system involvement on educational outcomes will vary between youth of different sexes and racial identities.

Prior Work and Contributions

- Prior work provides evidence for the negative impact of justice system involvement on graduation (Kirk & Sampson, 2013; Sweeten, 2006) and postsecondary enrollment (Widdowson et al., 2016)
 - Less work on suspension and expulsion
- Context of the individual and educational environment
- Further contributions of the current work
 - MLDS data allows for proper temporal ordering and accuracy
 - Multiple levels of system involvement
 - Large sample from racially and socioeconomically diverse state

Data

- Data Sources: Department of Education (K-12), Department of Higher Education, and Department of Juvenile Services
- Students in the 2013 ninth grade cohort
 - Exclude students who passed away or transferred out of MLDS schools
- N: 57,776 students

Variables

Dependent

- High school graduation (1/0)
- Suspension or expulsion (12th grade) (1/0)
- Postsecondary enrollment (1/0)

Independent

- Justice system contact (1/0)

Moderating

- Absence from Justice System Involvement (continuous)
- Justice System Involvement (1/0)

Control

- School District
- Race
- Sex

- Free or Reduced Lunch (1/0)
- Suspension (1/0)
- Special Education or 504 (1/0)
- English Language Learner (1/0)
- Test Scores (standardized)
- Absence (continuous)

Analytic Strategy

- Questions 1 and 3: Propensity Score Matching to estimate the Average Treatment Effect on the Treated (ATET)
 - Stratified by school district
 - Stratified by race, sex, and race-sex
 - Mahalanobis distance calculation with nearest neighbor matching (with replacement)
- Question 2: Logistic Regression testing moderating impact of absence due to justice system involvement on the relationship between justice system involvement and educational outcomes
 - Also how justice system involvement moderates relationship between absence and educational outcomes
 - Weighted by inverse propensity score
 - Robust standard errors

Descriptive Statistics

VARIABLES	Mean	SD	Min	Max
Graduated	0.937	0.242	0	1
Suspended in 12th Grade	0.043	0.203	0	1
Postsecondary	0.737	0.440	0	1
Justice-Involved	0.075	0.263	0	1
White	0.505	0.500	0	1
Black	0.361	0.480	0	1
Asian	0.068	0.252	0	1
Pacific Islander	0.005	0.073	0	1
Indigenous	0.042	0.201	0	1
Multiracial	0.080	0.271	0	1
Hispanic	0.123	0.329	0	1
Male	0.502	0.500	0	1
FRL	0.383	0.486	0	1
Special Education	0.100	0.300	0	1
ELL	0.040	0.196	0	1
Ever Suspended	0.155	0.362	0	1
Test Scores	0.481	0.757	-4.360	6.681
Days Absent	49.41	56.61	0	867.5

ATET Results – Question 1

Whole Sample

Graduation – 12% ↓

Suspension – 4% ↑

Postsecondary – 8% ↓

Regional Differences

Graduation – All Regions

Suspension – Only Central

Postsecondary – All But Central



ATET Estimates by Level of Justice System Involvement

Level of Involvement	ATET (SE)
Graduation	
Arrest	-0.061 (0.009)***
Adjudication	-0.063 (0.023)***
Nonresidential	-0.114 (0.018)***
Residential	-0.306 (0.025)***
Suspension	
Arrest	0.031 (0.011)***
Adjudication	0.040 (0.025)
Nonresidential	0.069 (0.021)***
Residential	0.033 (0.023)
Postsecondary	
Arrest	-0.055 (0.014)***
Adjudication	-0.110 (0.033)***
Nonresidential	-0.059 (0.027)**
Residential	-0.154 (0.036)***

Moderating Impact of Absence on Justice Involvement and Outcomes

Graduation	Bivariate	Education Covariates	All Covariates
Justice-Involved	0.530 (0.043)***	0.422 (0.033)***	0.419 (0.033)***
Absence due to Justice Involvement	0.994 (0.007)	0.995 (0.003)*	0.996 (0.003)
Justice-Involved x Absence due to Justice Involvement	0.985 (0.010)	0.989 (0.005)**	0.989 (0.005)**

Suspension	Bivariate	Education Covariates	All Covariates
Justice-Involved	1.116 (0.088)	0.956 (0.070)	0.961 (0.070)
Absence due to Justice Involvement	1.006 (0.004)	1.005 (0.003)**	1.005 (0.003)**
Justice-Involved x Absence due to Justice Involvement	0.996 (0.006)	0.989 (0.005)**	0.987 (0.005)**

Postsecondary	Bivariate	Education Covariates	All Covariates
Justice-Involved	0.630 (0.041)***	0.661 (0.049)***	0.660 (0.049)***
Absence due to Justice Involvement	0.396 (0.173)**	1.002 (0.432)	1.067 (0.399)
Justice-Involved x Absence due to Justice Involvement	2.480 (1.084)**	0.983 (0.424)	0.927 (0.346)

* p<0.10 ** p<0.05 *** p<0.01

Moderating Impact of Days Absent from Justice System Contact by Highest Level of Contact

VARIABLES	Graduation	Suspension	Postsecondary
Adjudication	0.923 (0.135)	0.879 (0.198)	1.034 (0.180)
Nonresidential Placement	0.861 (0.110)	1.013 (0.163)	1.035 (0.141)
Residential Placement	0.280 (0.034)***	0.721 (0.159)	0.700 (0.119)**
Days Absent Due to Justice System	1.002 (0.024)	1.000 (0.021)	1.026 (0.038)
Adjudication x Days Absent Justice	0.886 (0.084)	1.076 (0.185)	0.816 (0.087)*
Nonresidential x Days Absent Justice	0.915 (0.057)	1.088 (0.038)**	0.907 (0.083)
Residential x Days Absent Justice	0.994 (0.024)	0.992 (0.021)	0.973 (0.036)
FRL	0.588 (0.061)***	0.904 (0.131)	0.641 (0.057)***
Black	2.197 (0.252)***	1.771 (0.319)***	1.384 (0.156)***
AAPI	2.004 (0.754)*	1.028 (0.681)	2.613 (0.924)***
Indigenous	10.87 (12.29)**	1.379 (1.162)	1.281 (0.507)
Multiracial	1.493 (0.287)**	1.024 (0.327)	1.653 (0.332)**
Hispanic	1.669 (0.284)***	1.517 (0.403)	0.990 (0.169)
Male	0.534 (0.050)***	1.320 (0.172)**	0.464 (0.040)***
Special Education	1.000 (0.109)	1.069 (0.166)	0.513 (0.068)***
Test Scores	1.746 (0.097)***	0.952 (0.071)	1.792 (0.127)***
Days Absent	0.992 (0.001)***	1.000 (0.001)	0.994 (0.001)***
Ever Suspended	0.618 (0.059)***	4.088 (0.715)***	0.611 (0.054)***
ELL	0.459 (0.144)**	0.939 (0.478)	0.650 (0.280)
Constant	30.90 (9.928)***	0.038 (0.021)***	3.220 (0.840)***
Observations	4,302	2,425	3,128

Moderating Impact of Justice System Involvement on Absence and Outcomes

Graduation	Bivariate	Education Covariates	All Covariates
Justice-Involved	0.562 (0.087)***	0.541 (0.088)***	0.533 (0.085)***
Days Absent	0.987 (0.001)***	0.989 (0.001)***	0.989 (0.001)***
Justice-Involved x Days Absent	0.997 (0.002)*	0.997 (0.002)*	0.997 (0.002)*

Suspension	Bivariate	Education Covariates	All Covariates
Justice-Involved	2.177 (0.370)***	2.122 (0.374)***	2.148 (0.374)***
Days Absent	1.003 (0.0004)***	1.000 (0.001)	1.000 (0.001)
Justice-Involved x Days Absent	1.001 (0.001)	1.001 (0.001)	1.001 (0.001)

Postsecondary	Bivariate	Education Covariates	All Covariates
Justice-Involved	0.602 (0.073)***	0.644 (0.085)***	0.662 (0.087)***
Days Absent	0.986 (0.009)***	0.990 (0.001)***	0.990 (0.001)***
Justice-Involved x Days Absent	1.002 (0.002)	1.000 (0.002)	1.000 (0.0017)

* p<0.10 ** p<0.05 *** p<0.01

ATET Estimates for Graduation by Race and Sex

Characteristic	ATET (SE)	Characteristic	ATET (SE)
White	-0.124 (0.015)***	White Girls	-0.109 (0.024)***
Black	-0.128 (0.013)***	White Boys	-0.126 (0.019)***
AAPI	-0.091 (0.051)*	Black Girls	-0.052 (0.019)***
Indigenous	0.031 (0.082)	Black Boys	-0.166 (0.018)***
Hispanic	-0.169 (0.0345)***	AAPI Girls	-0.048 (0.046)
Multiracial	-0.063 (0.031)**	AAPI Boys	-0.156 (0.065)**
		Indigenous Girls	0.095 (0.204)
Female	-0.068 (0.013)***	Indigenous Boys	-0.091 (0.087)
Male	-0.141 (0.012)***	Multiracial Girls	-0.115 (0.044)***
		Multiracial Boys	-0.238 (0.052)***
		Hispanic Girls	-0.056 (0.052)
		Hispanic Boys	-0.067 (0.039)*

* p<0.10 ** p<0.05 *** p<0.01

ATET Estimates for Suspension by Race and Sex

Characteristic	ATET (SE)	Characteristic	ATET (SE)
White	0.043 (0.017)***	White Girls	0.052 (0.023)**
Black	0.033 (0.015)**	White Boys	0.039 (0.022)*
AAPI	0.088 (0.049)*	Black Girls	0.046 (0.024)*
Indigenous	0.063 (0.061)	Black Boys	0.025 (0.0020)
Multiracial	0.061 (0.037)	AAPI Girls	0.067 (0.064)
Hispanic	0.081 (0.031)***	AAPI Boys	0.105 (0.070)
		Indigenous Girls	0.167 (0.108)
Female	0.048 (0.016)***	Indigenous Boys	--
Male	0.040 (0.014)***	Multiracial Girls	-0.020 (0.040)
		Multiracial Boys	0.089 (0.067)
		Hispanic Girls	0.045 (0.052)
		Hispanic Boys	0.106 (0.038)***

* p<0.10 ** p<0.05 *** p<0.01

ATET Estimates for Postsecondary by Race and Sex

Characteristic	ATET (SE)	Characteristic	ATET (SE)
White	-0.077 (0.020)***	White Girls	-0.073 (0.035)**
Black	-0.059 (0.019)***	White Boys	-0.074 (0.024)***
AAPI	-0.107 (0.056)*	Black Girls	-0.015 (0.029)
Indigenous	-0.067 (0.066)	Black Boys	-0.094 (0.025)***
Hispanic	-0.026 (0.063)	AAPI Girls	-0.150 (0.146)
Multiracial	-0.102 (0.043)**	AAPI Boys	-0.111 (0.057)*
		Indigenous Girls	-0.150 (0.090)*
Female	-0.051 (0.020)**	Indigenous Boys	-0.100 (0.170)
Male	-0.086 (0.016)***	Multiracial Girls	-0.048 (0.075)
		Multiracial Boys	-0.029 (0.090)
		Hispanic Girls	-0.122 (0.074)*
		Hispanic Boys	-0.086 (0.051)*

* p<0.10 ** p<0.05 *** p<0.01

Logistic Regression Results by Semester of Last System Contact

Last Semester of System Involvement	Graduation	Suspension	Postsecondary
1 st	0.439 (0.071) ***	1.686 (0.262) ***	0.794 (0.112)
2 nd	0.410 (0.053) ***	1.524 (0.215) ***	0.658 (0.083) ***
3 rd	0.447 (0.053) ***	1.595 (0.221) ***	0.784 (0.092) **
4 th	0.410 (0.048) ***	1.595 (0.215) ***	0.808 (0.089) *
5 th	0.480 (0.054) ***	1.490 (0.366)	0.792 (0.078) **
6 th	0.391 (0.046) ***	1.077 (0.318)	0.056 (0.541) ***
7 th	0.265 (0.049) ***	0.843 (0.483)	0.649 (0.137) **
8 th	0.152 (0.055) ***	0.952 (0.762)	0.690 (0.383)
9 th	0.140 (0.065) ***	--	0.171 (0.121) **
10 th	0.409 (0.883)	12.28 (13.78) ***	--
Controls	YES	YES	YES
Constant	121.5 (25.65)***	0.017 (0.004) ***	5.151 (0.516) ***
N	57,135	55,264	53,622

Logistic Regression Results by Number of Semesters of Justice System Contact

VARIABLES	Graduation	Suspension	Postsecondary
Number of Semesters	0.622 (0.018)***	1.128 (0.047)***	0.816 (0.027)***
Male	0.583 (0.026)***	1.462 (0.074)***	0.483 (0.012)***
Black	1.952 (0.127)***	1.669 (0.119)***	1.418 (0.051)***
AAPI	3.134 (0.480)***	0.353 (0.087)***	2.920 (0.241)***
Indigenous	2.103 (0.760)**	0.966 (0.322)	2.373 (0.350)***
Multiracial	1.509 (0.176)***	1.014 (0.139)	1.792 (0.122)***
Hispanic	1.158 (0.085)**	1.016 (0.104)	0.965 (0.041)
FRL	0.579 (0.030)***	1.282 (0.074)***	0.622 (0.017)***
Special Education	1.162 (0.076)**	1.097 (0.079)	0.513 (0.020)***
Test Scores	2.122 (0.065)***	0.731 (0.025)***	2.275 (0.052)***
Days Absent	0.987 (0.0004)***	1.001 (0.0003)***	0.989 (0.0004)***
Suspended	0.495 (0.025)***	5.305 (0.299)***	0.582 (0.020)***
ELL	0.410 (0.033)***	1.026 (0.145)	0.421 (0.028)***
Constant	100.8 (19.82)***	0.017 (0.004)***	4.985 (0.492)***
Observations	57,776	55,893	54,140

Miscellaneous Results – Variations of the Dependent Variable

Variable	Delayed Graduation	GED	Days Removed	Degree Sought
Justice-Involved	1.315 (0.142) **	2.980 (0.319) ***	0.778 (0.875)	0.863 (0.032)***
Controls	YES	YES	YES	YES
Constant	0.001 (0.0004) ***	0.002 (0.001) ***	1.469 (1.072)	--
Cut 1				0.033 (0.007)***
Cut 2				0.219 (0.044)***
Cut 3				0.655 (0.132)
N	53,876	57,776	1,740	42,596

Delayed Graduation and GED are logistic regression results. Days removed is an OLS regression. Degree Sought is a multinomial logistic regression.

Summary of Results

- Justice system involvement is associated with a lower likelihood of graduation and postsecondary enrollment and a higher likelihood of suspension in the 12th grade even when accounting for confounding factors
 - These relationships vary based on one's characteristics, including region, race, sex, and race-sex and the outcome measured
 - Could also vary by the extent to which one is involved in the justice system
- School absence moderates this relationship in specific circumstances, and justice system involvement only moderates the relationship between absence and graduation
- Other factors, such as the timing and dosage of system involvement, could also impact this relationship

Limitations and Next Steps

Limitations

Administrative data means no information on internal characteristics such as motivation or stigma

Cannot compare behaviors between youth with discipline data

Next Steps

Collect qualitative information from students and teachers

Cohort impacts

Changes to suspension risk over time

Following impacts into adulthood

Conclusions

- Context matters in the relationship between justice system involvement and educational outcomes
 - May impact youth differently based on school district and characteristics
 - Evidence of differential impact in addition to differential involvement
 - Mixed labeling effects - worse for those least likely to be labeled in some cases (Chiricos et al., 2007)
 - Absence may play a role in this relationship but the full extent not yet known
- Policy implications
 - Focus on transition planning
 - Encourage justice-involved youth to continue their education
 - Ensure youth are given adequate resources in school

Thank you!

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