Adolescent Criminal Justice Involvement and Adulthood Sexually Transmitted Infection in a Nationally Representative US Sample

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ABSTRACT *Criminal justice involvement (CJI) disrupts social and sexual networks, and sexually transmitted infections (STIs) thrive on network disruption. Adolescent CJI may be a particularly important determinant of STI because experiences during adolescence influence risk trajectories into adulthood. We used Wave III (2001–2002: young adulthood) of the National Longitudinal Study of Adolescent Health (N=14,322) to estimate associations between history of adolescent (younger than 18 years) CJI and adult STI risk. Respondents who reported a history of repeat arrest in adolescence, adolescent conviction, and arrest both as an adolescent and an adult (persistent arrest) had between two to seven times the odds of STI (biologically confirmed infection with chlamydia, gonorrhea, or trichomoniasis) in adulthood and between two to three times the odds of multiple partnerships and inconsistent condom use in the past year in adulthood. In analyses adjusting for sociodemographic and behavioral factors, history of having six or more adolescent arrests was associated with more than five times the odds of STI (adjusted odds ratio (AOR) 5.44, 95 % confidence interval (CI) 1.74–17.1). Both adolescent conviction and persistent CJI appeared to remain independent correlates of STI (conviction: AOR 1.90, 95 % CI 1.02–3.55; persistent CJI: AOR 1.60, 95 % CI 0.99–2.57). Adolescents who have repeat arrests, juvenile convictions, and persist as offenders into adulthood constitute priority populations for STI treatment and prevention. The disruptive effect of adolescent CJI may contribute to a trajectory associated with STI in adulthood.*

KEYWORDS *Criminal justice involvement, Sexually transmitted infection, Sexual risk behavior, Adolescence, National Longitudinal Study of Adolescent Health*

INTRODUCTION

Risk of sexually transmitted infections (STI), including HIV, increases dramatically from adolescence into young adulthood. The highest rates of the most common

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reportable infections cluster among adults aged 20 to 24 years,¹ and as many as 15–30 % of all HIV infections are acquired before or during young adulthood.² There remains an urgent need to identify adolescent groups at greatest risk of acquiring STI to effectively target preventive interventions and identify the modifiable factors that drive young adult transmission.

Numerous surveys have measured alarming rates of sexual risk behaviors^{3,4} and STIs^{4–10} among incarcerated adolescents, highlighting the importance of juvenile offenders as a priority population for STI control. Recent surveys have found rates of chlamydia to be as high as 15–30 % among female and 10–15 % among male juvenile offenders^{4–10} versus less than 3 % of general population adolescents aged 15–19.¹¹ A number of factors may drive infection risk among adolescents with a history of criminal justice involvement (CJI). Comorbid with mental health problems, substance use is common among juvenile offenders and is a risk factor for sexual risk taking among youth involved in the criminal justice system.^{12–16} In addition, delinquency—a result of numerous factors including social and economic deprivation, victimization, risk-taking proclivity, and deficits in executive functioning and reward orientation—contributes to adolescent CJI and elevated levels of sexual risk and may help explain high STI risk among adolescent offenders.^{17–20} In a recent study that used data from the National Longitudinal Study of Adolescent Health (Add Health), Aalsma et al. highlighted the strong association between adolescent delinquency and adulthood STI risk,²¹ suggesting that high levels of STI in incarcerated populations may be attributed, in part, to risk-taking associated with delinquency. These results supported prior evidence of the link between conduct disorder and antisocial lifestyle and disease including STI.^{22–26}

While high levels of STI among justice-involved youth may be attributed to factors such as drug use and delinquency, CJI itself may constitute an STI risk factor.^{27–32} CJI—arrest, conviction, and incarceration—is a destabilizing life event that disrupts social and sexual networks.^{33–37} Since STI/HIV transmission thrives on network disruption, CJI that begins during adolescence and persists into adulthood may serve as a recurring threat to network stability. While CJI has been identified as an independent correlate of STI risk in cross-sectional studies among adults,^{27–30,32} little to no research has evaluated the degree to which CJI during adolescence is associated with young adult STI/HIV risk. The purpose of this study was to use data from Add Health to measure associations between adolescent CJI and adulthood STI risk while controlling for important confounding factors including respondents' baseline sociodemographic characteristics, substance use, and delinquency.

METHODS

Add Health is a longitudinal cohort study designed to investigate health from adolescence into adulthood in a nationally representative sample of US youth. Wave I (1994–1995; range 11–17 years) data collected from adolescents and parents were used to provide a sociodemographic background on respondents. During Wave III (2001–2002; range 18–28 years), respondents were re-interviewed about CJI and sexual risk taking. Additionally, urine specimens were collected for determination of *Chlamydia trachomatis* and *Neisseria gonorrhea* by ligase chain reaction (Abbott LCx® Probe System, Abbott Laboratories, Abbott Park, IL, USA) and *Trichomonas vaginalis* by polymerase chain reaction (Amplicor CT/NG Urine Specimen Prep Kit, Roche Diagnostic Systems, Indianapolis, IN, USA). The study design has been described in detail elsewhere.^{38–43} Ethical approval for this research was obtained from the University of Florida Institutional Review Board.

Measures

Exposures: Adolescent CJI (Wave III). At Wave III, respondents were asked, “How many times have you been stopped or detained by the police for questioning about your activities?” Only those who answered affirmatively were asked the follow up questions: “Have you ever been arrested or taken into custody by the police?” Those who answered affirmatively were asked, “How old were you the first time this happened?” Those who had been arrested prior to the age of 18 years were asked, “How many times were you arrested before you were 18?” and “Have you ever been convicted of or pled guilty to a crime, or been found delinquent, in juvenile court?” Based on these variables, we coded four nominal categorical indicators of adolescent CJI, defined as CJI prior to the age of 18 years: *number of adolescent arrests* [1 time (≤ 50 th percentile), 2–5 times (> 50 th percentile and ≤ 90 th percentile), or 6 or more times (> 90 th percentile) versus never (the referent)], *ever convicted or plead guilty in a juvenile court* (yes versus no [the referent]), and *history of arrest as an adolescent and/or adult* (arrested as an adolescent but not as an adult [adolescent-limited arrest], arrested as an adult but not as an adolescent [adult-limited arrest], and arrested as both an adolescent and as an adult [persistent arrest] versus no history of arrest [the referent]).

Outcomes: STI Risk Indicators (Wave III). We examined *biologically confirmed curable STI* at Wave III, defined by a positive test result for *C. trachomatis*, *N. gonorrhea*, or *T. vaginalis* on the Wave III urine specimen versus a negative result for all three tests. We also assessed two dichotomous indicators of sexual risk in the year prior to Wave III: *multiple partnerships and inconsistent condom use* (defined by having three or more partnerships in the past year and failure to report use of condoms during all sexual encounters in the past year) and *sex with an STI-infected partner*, defined by report of sex in the past year with at least one partner who the respondent reported to have ever had an STI.

Potential Confounding Factors (Waves I and III). The following sociodemographic and behavioral factors were considered as potential confounding variables based on their a priori relationship with the exposure and outcome: age; gender; race/ethnicity; age at first vaginal sexual intercourse; high school education status of mother/primary caretaker; high school education status of respondent; poverty level measured at Wave III, defined as difficulty affording housing/utilities in past year; adolescent history of getting drunk or marijuana, cocaine, or injection drug use; high levels of delinquency in adolescence, defined as a score of 6 or 7 on a seven-point delinquency scale constructed following Aalsma et al. (2010)²¹; and indicators of hopelessness in adolescence, including respondent report that he or she thought seriously about committing suicide in the past year, that he or she had at least a 50–50 chance of being killed by age 21 years, and that he or she had at least a 50–50 chance of getting HIV or AIDS.

Data Analysis

For all analyses, we used survey commands in Stata Version 10.1 (Stata Corp., College Station, TX, USA) to account for stratification, clustering, and unequal selection probabilities, yielding nationally representative estimates. We used bivariable analyses to calculate weighted prevalences of participant sociodemographic, psychosocial, and behavioral characteristics by number of prior adolescent arrests. Using logistic regression, we estimated unadjusted and adjusted odds ratios

(ORs) and 95 % confidence intervals (CIs) for associations between each adolescent criminal justice indicator and adulthood STI risk indicators.

For each adjusted model, we used a manual change in estimate backwards elimination procedure to identify the particular set of confounding variables necessary to include in each final model.⁴⁴ We ensured that the OR derived from each final model was no greater than 10 % different than the OR derived from the fully adjusted model, which included all potential confounding variables listed above.

RESULTS

Of the 18,924 participants in the weighted Wave I sample, 14,322 (75.7 %) were located and re-interviewed during Wave III and had no missing values for sample weight variables. The weighted respondent population was 67 % White, 16 % Black, 12 % Latino, 4 % Asian American, and >1 % Native American.

Approximately 5 % reported a history of one or more arrests as an adolescent (i.e., before age 18 years); 3, 2, and 0.4 % reported having been arrested as an adolescent one time, two to five times, and six or more times, respectively. Approximately 2.3 % had been convicted or plead guilty as an adolescent. Approximately 3 % reported an adolescent-limited arrest, 7 % reported an adult-limited arrest, and 2.6 % reported persistent arrest. The mean lifetime number of arrests was the greatest among those who had been arrested both as a juvenile and as an adult (mean, 5.1 arrests), followed by those who had been arrested as an adolescent but not as an adult (mean, 2.1 arrests) and those who had been arrested as an adult but not as an adolescent (mean, 1.8 arrests). Approximately 6.3 % had a biologically confirmed STI at Wave III, 11.8 % reported multiple partnerships and inconsistent condom use, and 6.4 % reported sex in the past year with an STI-infected partner.

Sociodemographic, Psychosocial, and Behavioral Characteristics by History of Adolescent Arrest

Respondent sociodemographic, psychosocial, and behavioral characteristics were associated with number of times arrested as an adolescent (Table 1). For example, among respondents with no adolescent arrests, 11 % had less than a high school education; among respondents with six or more arrests, 54 % had less than a high school education. Number of arrests as an adolescent was also associated with adolescent hopelessness, indicated by report of suicide contemplation in the past year and belief that he or she would be killed by age 21 years but was not associated with beliefs about acquiring HIV/AIDS. The proportion of respondents indicating, at Wave I, use of alcohol, marijuana, cocaine, or injection drugs generally increased with increasing number of arrests. The mean age at first sex generally decreased with increasing number of adolescent arrests, from a mean age of 16.5 years among those who had never been arrested (95 % CI 16.4–16.6 years) to a mean of 14.1 years (95 % CI 13.3–14.9 years) among those who had been arrested six or more times.

Associations: Adolescent CJI and Adulthood STI

Number of Adolescent Arrests. Increasing involvement in the criminal justice system was generally associated with greater odds of biologically confirmed STI as a young adult (Table 2). In unadjusted analyses, adolescents who were arrested 6+ times had more than seven times the odds of adult STI compared to those with no adolescent arrests (OR 7.56, 95 % CI 3.00–19.10). In adjusted analyses, the odds of adult STI

TABLE 1 Respondent sociodemographic, psychosocial, and behavioral characteristics by history of adolescent arrest, among young adults aged 18–28 years in the USA

	No adolescent arrest		Arrested 1 time		Arrested 2–5 times		Arrested 6+ times		Chi-square <i>p</i> -value for association
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Demographic characteristics									
Sex									
Female	7,421	51.2	77	21.3	19	7.5	3	7.4	0.0000
Male	6,179	48.8	260	78.7	209	92.5	40	92.6	
Age (years)									
18–20	3,087	28.2	103	37.5	72	34.8	8	23.4	0.0160
21	2,151	16.3	64	20.7	39	19.3	7	21.5	
22	2,593	16.7	57	13.7	49	17.2	12	29.0	
23	2,673	15.8	57	10.0	30	10.9	10	14.7	
24–28	3,096	23.2	56	18.2	38	17.8	6	11.4	
Race/ethnicity									
White	7,365	68.0	196	69.7	109	59.6	21	52.1	0.0063
Black	2,883	15.9	64	15.8	56	23.0	8	12.3	
Latino	2,208	11.7	53	10.1	49	15.2	8	24.6	
Native American	124	0.73	5	2.2	2	0.5	2	4.8	
Asian American	985	3.8	18	2.2	11	1.7	4	6.2	
Socioeconomic position									
Education level of mother/primary female caretaker (Wave I)									
<HS education	2,060	16.1	45	14.3	36	22.1	13	20.7	0.3621
HS education	3,765	34.0	95	34.0	62	28.2	9	45.4	
>HS education	6,347	49.9	164	51.7	109	49.8	15	33.9	
Respondent education level (Wave III)									
<HS education	1,279	10.8	51	15.9	63	27.9	20	53.9	0.0000
HS education	12,307	89.3	286	84.1	165	72.1	23	46.1	
Respondent/household could not afford housing/utilities in past year (Wave III)									
No	11,644	86.4	268	80.1	179	80.5	28	73.6	0.0148
Yes	1,801	13.6	65	19.9	47	19.5	12	26.4	
Adolescent delinquency (Wave I)									
Score on delinquency measure									
Low (score of 0–5)	13,357	99.3	319	95.9	211	95.2	35	87.7	0.0000
High (score of 6–7)	115	0.7	13	4.1	13	4.8	7	12.3	
Adolescent depression/hopelessness (Wave I)									
Thought seriously about suicide in the past year									
No	11,717	87.0	265	78.6	190	85.4	36	90.3	0.0042
Yes	1,770	13.0	69	21.4	35	14.6	6	9.7	
Believed he/she had at least a 50–50 chance of being killed by the age of 21									
No	11,488	85.7	270	82.8	173	74.8	31	73.0	0.0021
Yes	2,024	14.3	64	17.3	55	25.2	9	27.0	
Believed he/she had at least a 50–50 chance of getting HIV/AIDS									
No	12,026	89.4	296	87.8	192	83.3	35	82.0	0.1544
Yes	1,470	10.6	38	12.2	36	16.7	6	18.0	
Adolescent drug use (Wave I)									
Ever drank and got drunk									
No	9,803	72.1	180	53.0	112	52.4	20	44.1	0.0000
Yes	3,655	27.9	153	47.0	112	47.6	22	55.9	
Ever used marijuana									
No	9,902	74.0	164	49.9	94	39.2	17	35.2	0.0000
Yes	3,558	26.0	170	50.1	129	60.8	25	64.8	
Ever used cocaine									
No	13,053	96.9	309	91.7	204	90.7	35	89.7	0.0000
Yes	398	0.3	24	8.4	19	9.4	7	10.4	
Ever used injection drugs									
No	13,431	99.5	332	98.4	223	98.6	43	100	0.0984
Yes	62	0.5	4	1.6	4	1.4	0	0.0	
	Weighted mean (95 % CI)		Weighted mean (95 % CI)		Weighted mean (95 % CI)		Weighted mean (95 % CI)		
Age at first vaginal sex (Wave I)	16.5	16.4–16.6	15.2	14.9–15.6	15.1	14.7–15.5	14.1	13.3–14.9	

among respondents with 6+ adolescent arrests was approximately five times greater than respondents with no adolescent arrest (adjusted OR (AOR) 5.44, 95 % CI 1.74–17.1). The strongest confounding factors were gender, race/ethnicity, age at first sexual intercourse, mother's education, respondent education, and respondent crack/cocaine use.

Ever Convicted or Plead Guilty in a Juvenile Court. In both unadjusted and adjusted analyses, history of conviction/pleading guilty in juvenile court was associated with approximately twice the odds of STI (AOR 1.90, 95 % CI 1.02–3.55).

History of Arrest as an Adolescent and/or Adult. Adolescent-limited and adult-limited arrest indicators were not associated with STI. In unadjusted analyses, persistent arrest was associated with nearly twice the odds of adulthood STI (OR 1.98, 95 % CI 1.28–3.08). In adjusted analyses, persistent arrest appeared to remain associated with moderate elevations in STI, though the result was marginally significant at the 0.05 level (AOR 1.60, 95 % CI 0.99–2.57). Gender, race/ethnicity, age at first sexual intercourse, mother's education, respondent education, and respondent crack/cocaine use were the strongest confounders.

Associations: Adolescent CJI and Reported Inconsistent Condom Use and Multiple Sexual Partners

Number of Adolescent Arrests. The unadjusted association between number of adolescent arrests and multiple partnerships and inconsistent condom use in the past year followed a dose-response relationship (Table 3). In unadjusted analyses, compared to respondents with no adolescent arrests, increasing odds of multiple partnerships and inconsistent condom use in the past year were observed among respondents with 1 adolescent arrest (OR 2.12, 95 % CI 1.59–2.82), with two to five adolescent arrests (OR 3.37, 95 % CI 2.24–5.07), and with 6+ adolescent arrests (OR 3.64, 95 % CI 1.50–8.84) (Table 3). In adjusted analyses, the association between history of one arrest and the multiple partnerships and inconsistent condom use weakened and was no longer significant (AOR 1.19, 95 % CI 0.88–1.62), the association between two to five adolescent arrests and the outcome weakened yet remained (AOR 1.84, 95 % CI 1.19–2.84), while the association between history of 6+ adolescent arrests and the outcome was no longer significant (AOR 1.83, 95 % CI 0.67–4.99). The associations were attenuated by adjustment for gender, race/ethnicity, age at first sexual intercourse, and respondent alcohol use in the past year.

Ever Convicted or Plead Guilty in a Juvenile Court. Respondents who reported a history of conviction/pleading guilty in juvenile court had more than two times the odds of reporting multiple partnerships and inconsistent condom use in the past year compared to respondents with no history of conviction/pleading guilty in juvenile court (OR 2.33, 95 % CI 1.63–3.33). In adjusted analyses, the association weakened to 1.23 (95 % CI 0.83–1.81). The strongest confounding factors were gender and age at first sexual intercourse.

History of Arrest as an Adolescent and/or Adult. Adolescent-limited arrest and adult-limited arrest were each associated with over twice the odds of multiple

TABLE 2 Odds ratios and 95 % confidence intervals for the association between adolescent justice involvement and adulthood biologically confirmed sexually transmitted infection (assessed at Wave III), among young adults aged 18–28 years in the USA

Adolescent criminal justice involvement	STI		
	Weighted %	Unadjusted OR (95 % CI)	Adjusted OR (95 % CI) ^a
Number of adolescent arrests (<18 years old)			
0 times	6.1	Referent	Referent
1 time	7.4	1.22 (0.73–2.06)	1.30 (0.76–2.24)
2–5 times	7.8	1.29 (0.59–2.83)	1.20 (0.50–2.86)
6+ times	33.0	7.56 (3.00–19.10)	5.44 (1.74–17.1)
Ever convicted or plead guilty in a juvenile court			
No	6.1	Referent	Referent
Yes	12.2	2.13 (1.25–3.62)	1.90 (1.02–3.55)
History of arrest as an adolescent and/or adult			
Never arrested as an adolescent or an adult	6.1	Referent	Referent
Adolescent-limited arrest history	7.1	1.18 (0.64–2.22)	1.30 (0.68–2.48)
Adult-limited arrest history	6.7	1.11 (0.78–1.56)	1.16 (0.79–1.71)
Persistent arrest history	11.4	1.98 (1.28–3.08)	1.60 (0.99–2.57)

^aAdjusted for any of the following demographic, socioeconomic, and substance abuse variables, if identified as confounders using the backwards elimination strategy of model building: age; gender; race/ethnicity; age at first sex; education status of mother/primary caretaker; high school education status of respondent; poverty level measured at Wave III, defined as difficulty affording housing/utilities in past year; adolescent history of getting drunk or marijuana, cocaine, or injection drug use in the year prior to Wave I; high levels of delinquency in adolescence, defined as a score of 7 on a seven-point delinquency scale; and indicators of hopelessness in adolescence, including respondent report that he or she thought seriously about committing suicide in the past year, that he or she had at least a 50-50 chance of being killed by age 21 years, and that he or she had at least a 50-50 chance of getting HIV or AIDS

TABLE 3 Odds ratios and 95 % confidence intervals for the association between adolescent justice involvement and adulthood high-risk sexual partnerships (Wave III), among young adults aged 18–28 years in the USA

Reported 3+ partners in the past year and inconsistent condom use			Sex with an STI-infected partner in the past year			
Adolescent criminal justice involvement	Weighted %	Unadjusted OR (95 % CI)	Adjusted OR (95 % CI) ^a	Weighted %	Unadjusted OR (95 % CI)	Adjusted OR (95 % CI) ^a
Number of adolescent arrests (<18 years old)						
0 times	11.0	Referent	Referent	6.3	Referent	Referent
1 time	20.8	2.12 (1.59–2.82)	1.19 (0.88–1.62)	7.4	1.19 (0.68–2.09)	0.87 (0.43–1.75)
2–5 times	29.5	3.37 (2.24–5.07)	1.84 (1.19–2.84)	10.1	1.67 (0.88–3.19)	1.51 (0.71–3.20)
6+ times	31.1	3.64 (1.50–8.84)	1.83 (0.67–4.99)	6.3	1.00 (0.21–4.80)	1.22 (0.20–7.42)
Ever convicted or plead guilty in a juvenile court						
No	11.4	Referent	Referent	6.3	Referent	Referent
Yes	23.2	2.33 (1.63–3.33)	1.23 (0.83–1.81)	8.0	1.29 (0.73–2.29)	1.27 (0.66–2.43)
History of arrest as a adolescent and/or adult						
Never arrested as a adolescent or an adult	10.1	Referent	Referent	6.2	Referent	Referent
Adolescent-limited arrest history	20.5	2.29 (1.65–3.18)	1.32 (0.91–1.92)	8.6	1.43 (0.82–2.53)	1.49 (0.78–2.85)
Adult-limited arrest history	22.8	2.62 (2.12–3.25)	1.87 (1.47–2.37)	7.8	1.28 (0.93–1.76)	1.24 (0.85–1.82)
Persistent arrest history	27.9	3.45 (2.53–4.70)	1.78 (1.24–2.56)	7.9	1.31 (0.67–2.57)	0.90 (0.38–2.10)

^aAdjusted for any of the following demographic, socioeconomic, and substance abuse variables, if identified as confounders using the backwards elimination strategy of model building: age; gender; race/ethnicity; age at first sex; education status of mother/primary caretaker; high school education status of respondent; poverty level measured at Wave III, defined as difficulty affording housing/utilities in past year; adolescent history of getting drunk or marijuana, cocaine, or injection drug use in the year prior to Wave I; high levels of delinquency in adolescence, defined as a score of 7 on a seven-point delinquency scale; and indicators of hopelessness in adolescence, including respondent report that he or she thought seriously about committing suicide in the past year, that he or she had at least a 50–50 chance of being killed by age 21 years, and that he or she had at least a 50–50 chance of getting HIV or AIDS

partnerships and inconsistent condom use in the past year (adolescent only OR 2.29, 95 % CI 1.65–3.18; adult only OR 2.62, 95 % CI 2.12–3.25), while persistent arrest was associated with over three times the odds (OR 3.45, 95 % CI 2.53–4.70). In adjusted analyses, adolescent-limited arrest was no longer associated with multiple partnerships and inconsistent condom use (AOR 1.32, 95 % CI 0.91–1.92). The association between adult-limited arrest and the outcome weakened but remained (AOR 1.87, 95 % CI 1.47–2.37), as did the association between persistent arrest and the outcome (AOR 1.78, 95 % CI 1.24–2.56). The strongest confounding factors were gender, race/ethnicity, age at first sexual intercourse, mother's education, respondent education, and respondent report of getting drunk in the past year.

Associations: Adolescent CJI and Sex with an STI-Infected Partner

None of the four measures of adolescent CJI were associated with increased likelihood of adulthood report of sex with an STI-infected partner in the past year.

DISCUSSION

In this nationally representative US sample, those who reported a history of adolescent CJI followed a trajectory of risk that resulted in elevated levels of multiple partnerships, unprotected sex, and biologically confirmed STI in adulthood. In addition, adjusted analyses suggest that CJI in adolescence not only serves as a correlate of subsequent STI risk but that it also may constitute an independent risk factor of and potential contributor to STI in adulthood. Findings corroborate prior calls for sexual risk reduction and STI testing and treatment among criminal justice-involved youth.^{5–9} In addition, the current study supports extant literature indicating that CJI is associated with risk behavior and infection,^{27–30,32} serving as the first, to our knowledge, to provide evidence that adolescent CJI may contribute to subsequent STI risk.

Arrest and incarceration are hypothesized to lead to STI risk, in part, because CJI is a disruptive life event that fractures social and sexual networks. Network disruption, in turn, may contribute to elevations in high-risk partnerships, including multiple and concurrent partnerships. Consistent network disruption through adolescence into young adulthood may help explain the high STI levels observed in this study among those who had a history of CJI since adolescence. Given this study is the first to document the association between adolescent CJI and adulthood STI, the findings highlight a need for additional research on the relationship between early CJI and adulthood STI risk using data that will enable exploration of life course trajectories and mediating pathways.

STI was concentrated among those with high levels of exposure to CJI. Those who had high levels of repeat adolescent arrest experienced alarming elevations in risk, while a history of adolescent conviction and persistent CJI were each associated with twice the odds of STI in adulthood. Failure to reach these justice-involved youth remains an important missed opportunity in public health and STI control efforts.

Our findings indicate that adolescents who are involved in the criminal justice system experience disproportionate social vulnerability including sociodemographic and psychosocial disadvantage, factors that drive STI. The current study highlights a clear need to address these sociodemographic and psychosocial vulnerabilities

among those with a history of adolescent CJI. These factors constitute important public health concerns in themselves. In addition, adjusted analyses also suggest these factors play a role in the STI-related sexual risk behaviors observed and hence that addressing these factors has implications for STI prevention.

We found no evidence of an association between adolescent CJI and links to high-risk networks, as measured by reported sex with an STI-infected partner, results which contradict findings of a prior study conducted by members of our group.⁴⁵ It is possible that no relationship was observed in the current Add Health study as a result of biased measurement of links to STI-infected partners. Despite the null findings observed in this study, the theoretical justification for the link between CJI and links to high-risk networks and prior empirical evidence of the association points to the need for additional studies on how early CJI may influence changes in sexual networks that persist into young adulthood.

A number of study limitations should be noted. First, while an important study strength is that Add Health has measured multiple and diverse socioeconomic, psychosocial, and behavioral variables in both adolescence and adulthood and hence allows for fairly rigorous control of confounding, residual confounding constitutes an important threat to study validity. Second, although Add Health is a longitudinal study, measurement of adolescent CJI was captured retrospectively during Wave III in adulthood; hence, this study is not truly longitudinal in design. Further, due to a skip pattern error in the Add Health data collection instruments, assessment of any prior history of incarceration during adolescence was not possible. This prevented comparison of arrest versus incarceration as correlates of STI risk in this sample.

Despite these limitations, this study—among the first to examine the relationship between adolescent CJI and adulthood STI—demonstrated robust associations in a nationally representative sample. The results indicate that adolescent criminal justice populations are priority populations for STI control. The findings highlight the need for additional research that measures the degree to which adolescent CJI may contribute to adulthood STI risk and that identifies the sexual risk and network factors that mediate these associations. In addition, findings suggest that efforts to prevent or reduce persistent CJI (e.g., diversion programs) may have public health benefits.

ACKNOWLEDGMENTS

This research was supported by the National Institute on Drug Abuse grant Longitudinal Study of Substance Use, Incarceration, and STI in the US (Maria R. Khan, PI, R03 DA026735). This research uses data from Add Health, a program project designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris, and funded by a grant P01-HD31921 from the National Institute of Child Health and Human Development, with cooperative funding from 17 other agencies.

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