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BACKGROUND

The prison boom occurring over the past four decades in the United States is well documented. Roughly 100 per 100,000 Americans were incarcerated in the 1970's¹ while the number soared to over 700 per 100,000 residents by 2010². As such, 2.3 million incarcerated individuals are currently parents to 1.7 million children. A clear picture has begun to emerge on the effect of incarceration on the incarcerated. However there is a growing body of literature interested in the collateral consequences of incarceration on families and communities.

Research suggests that parental incarceration promotes antisocial behavior^{3,4} and substance abuse⁵ among adolescents, but effects on mental health outcomes are unclear⁶. The lack of consistent findings may reflect that the impact of parental incarceration may be heterogeneous across subgroups. Specially, emerging evidence suggests that girls' mental health may be more adversely affected than boys, but that boys may externalize stress via alcohol and substance abuse. No clear picture has emerged regarding variability across racial groups.

OBJECTIVES

The purpose of this study was to examine the causal effect of parental incarceration on children's mental health and substance use outcomes. I was also interested in examining whether the effects of parental incarceration differ by race and gender.

METHOD

Data come from The National Longitudinal Survey of Youth 97 (NLSY97), a nationally representative survey conducted by the US Bureau of Labor Statistic. The NLSY97 collected information from 8,984 youths aged 14-18 years in 1997. Participants were followed up annually until 2011. The overall retention rate by round 15 was 83.2%.

Exposure (A)

- Parental incarceration before the age of 21

Outcomes (Y)

- Mental health score (MHI-5) where a higher score is indicative of worse mental health
- # days in the past month a respondent consumed 5 or more alcoholic beverages in a sitting
- Ever consumed drugs (other than marijuana) in the past month

METHOD (CON'T)

Table 1. Measured baseline covariates

Respondent	Parent
Age	Father completed high school
Gender	Mother completed high school
Race	Household income
Live with both parents	

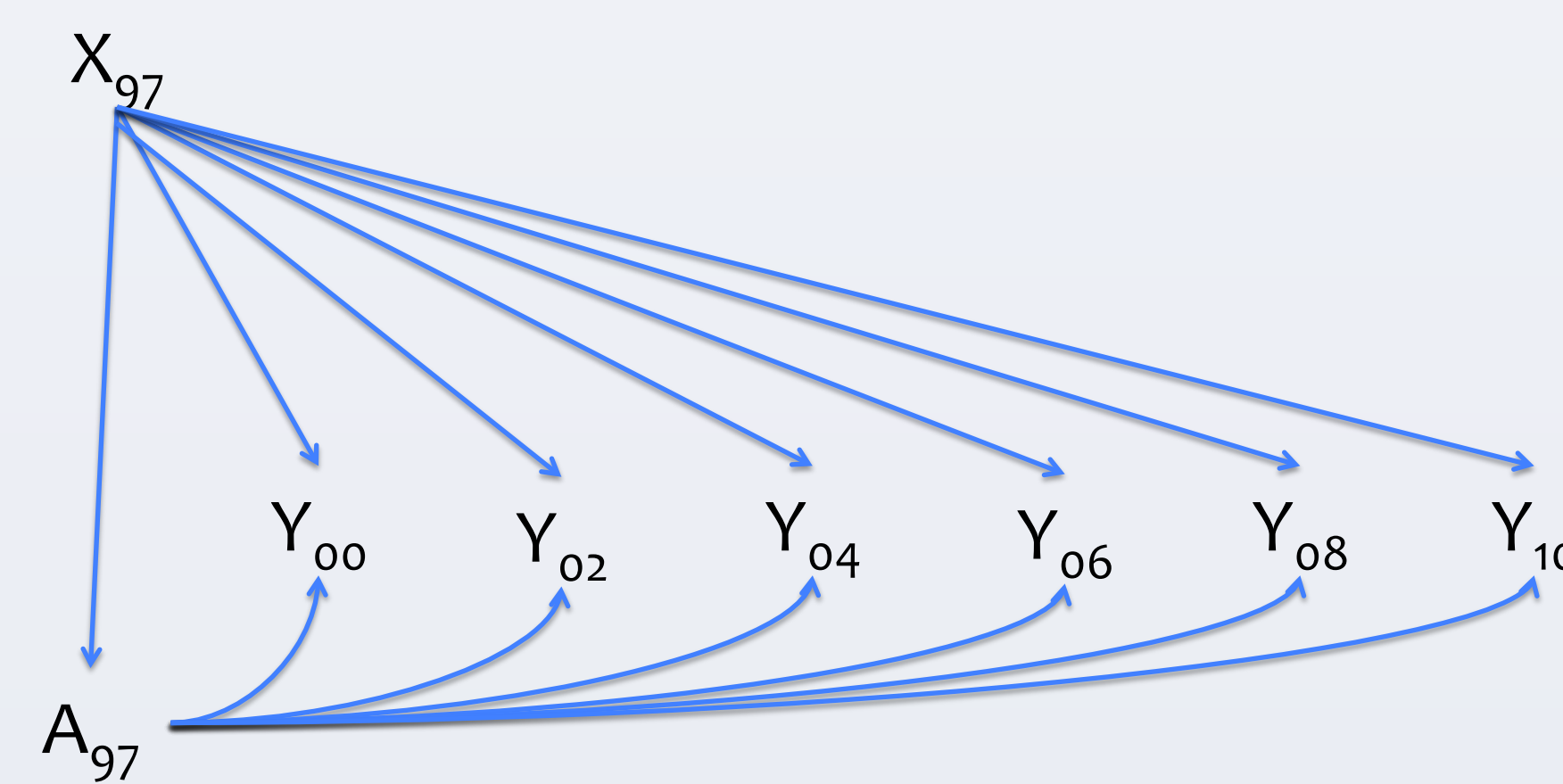


Figure 1. Directed Acyclic Graph

STATISTICAL ANALYSIS

- Propensity scores estimated via logistic regression $e(x) = \Pr(\text{Exposed}=1|X')$
- 10:1 Nearest-neighbor matching using .002 calipers
- Compute standardized difference to evaluate covariate balance
- Linear, negative binomial and logistic regression fit with generalized estimating equations using
 - Identity link and Gaussian distribution for mental health score
 - log link and negative binomial distribution for alcohol use
 - Logit link and binomial distribution for drug use

RESULTS

Table 2. Baseline characteristics

	Exposed (N=113)	Unexposed (N=7392)	Total (N=7505)
Age, mean (SD)	13.8 (1.3)	14.3 (1.5)	14.3 (1.5)
Male	.46	.51	.51
Black	.25	.26	.26
Father's education	.27	.40	.38
Mother's education	.34	.41	.37
Income, mean (SD)	36,136 (34226)	47,112 (42337)	46,396 (42128)
Family structure	.35	.50	.49

RESULTS (CON'T)

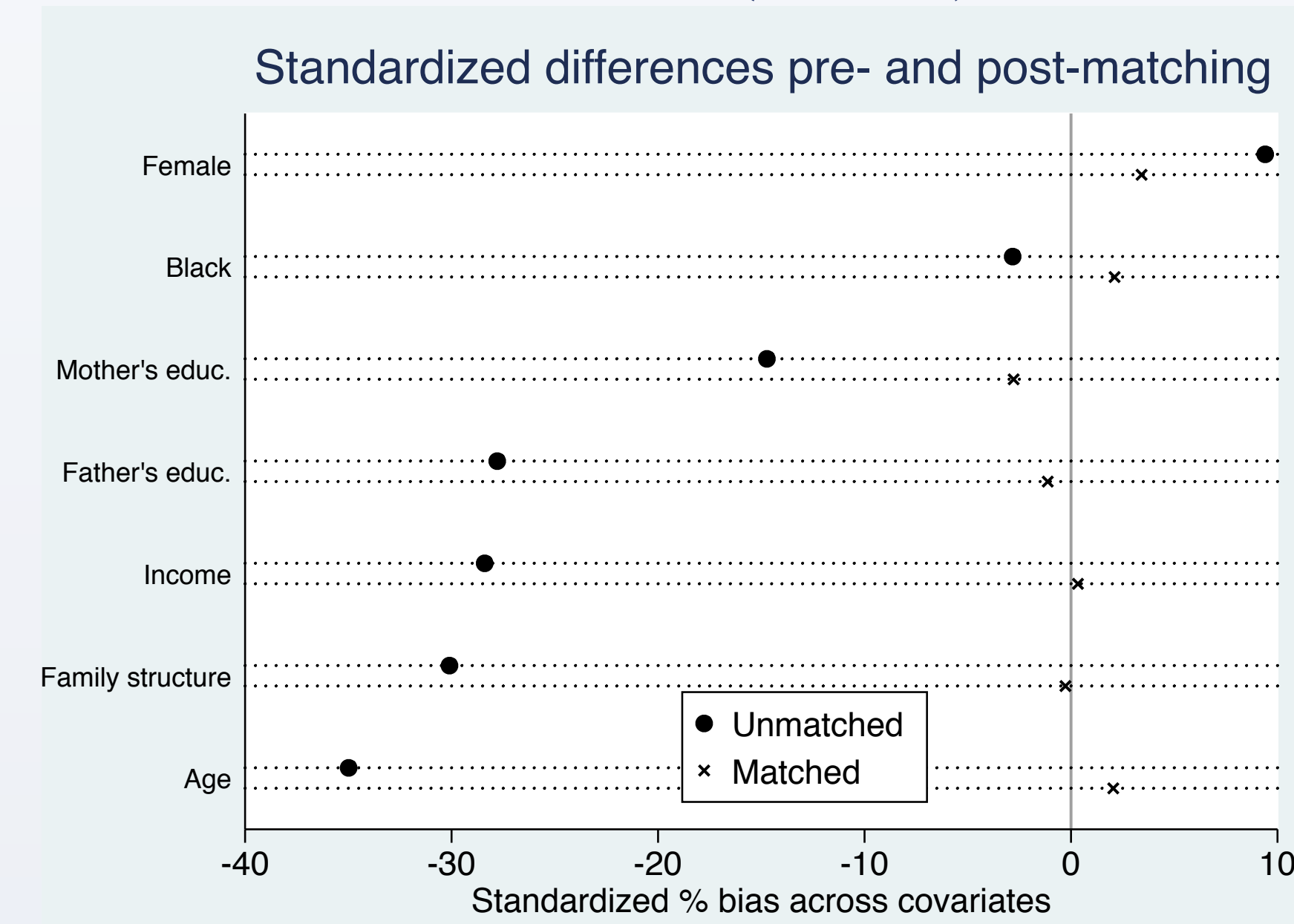


Figure 2. Standardized differences pre- and post-matching

Effect of parental incarceration on MHI-5 mental health scores

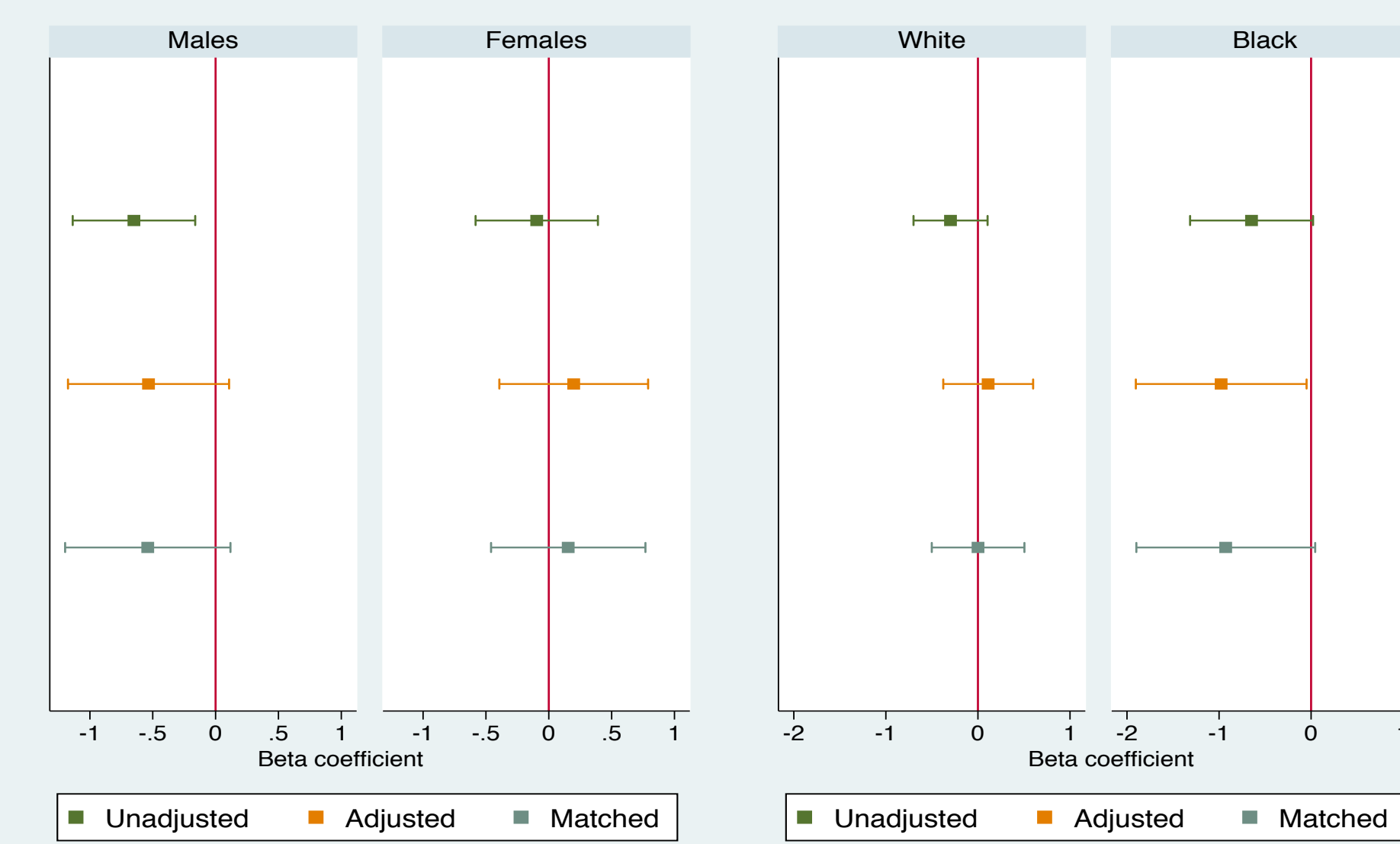


Figure 3. Effect of parental incarceration on MHI-5 mental health scores, stratified by gender and race.

Effect of parental incarceration on alcohol consumption

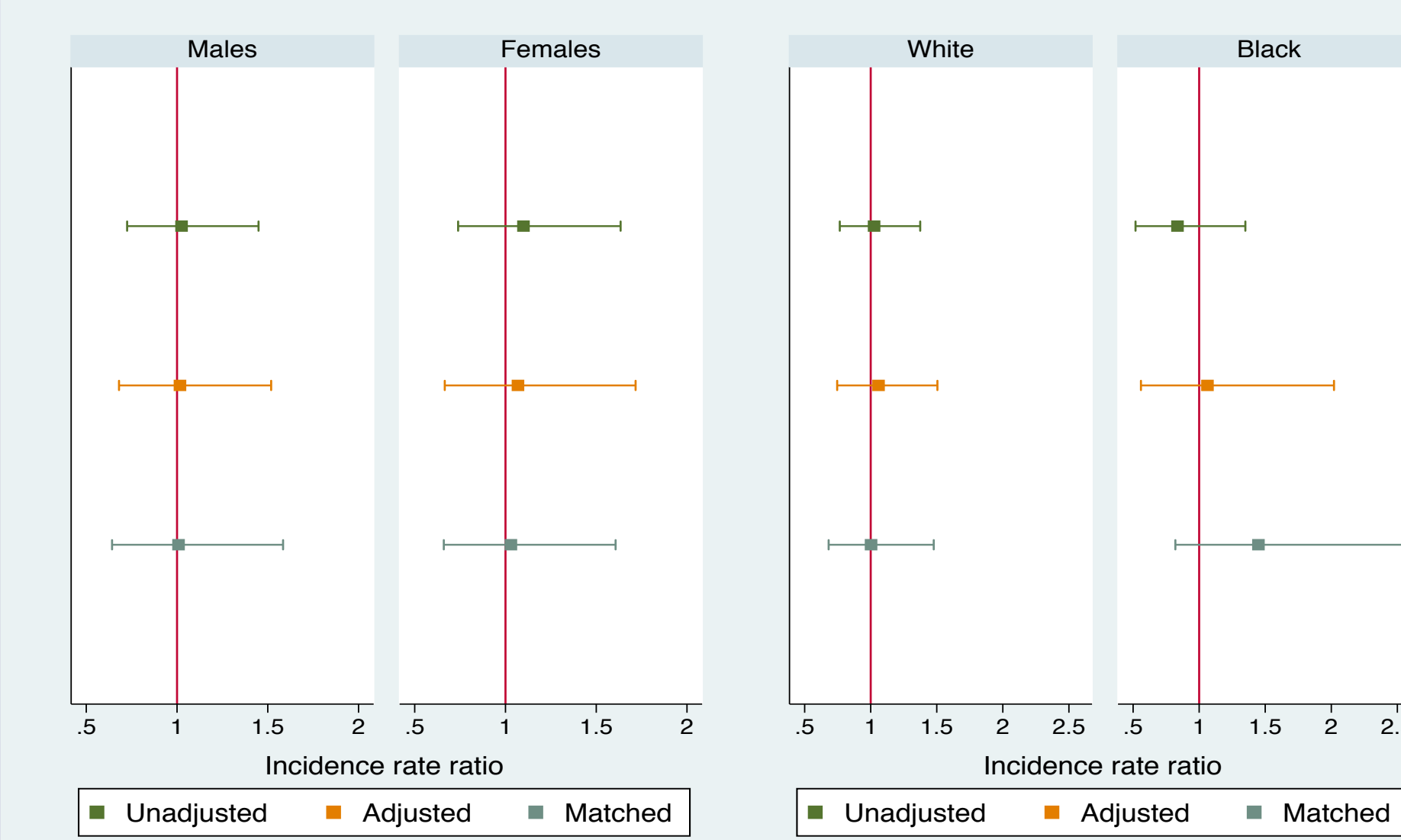


Figure 4. Effect of parental incarceration on number of days in the past month where five or more alcoholic beverages were consumed in a sitting stratified by gender and race

RESULTS (CON'T)

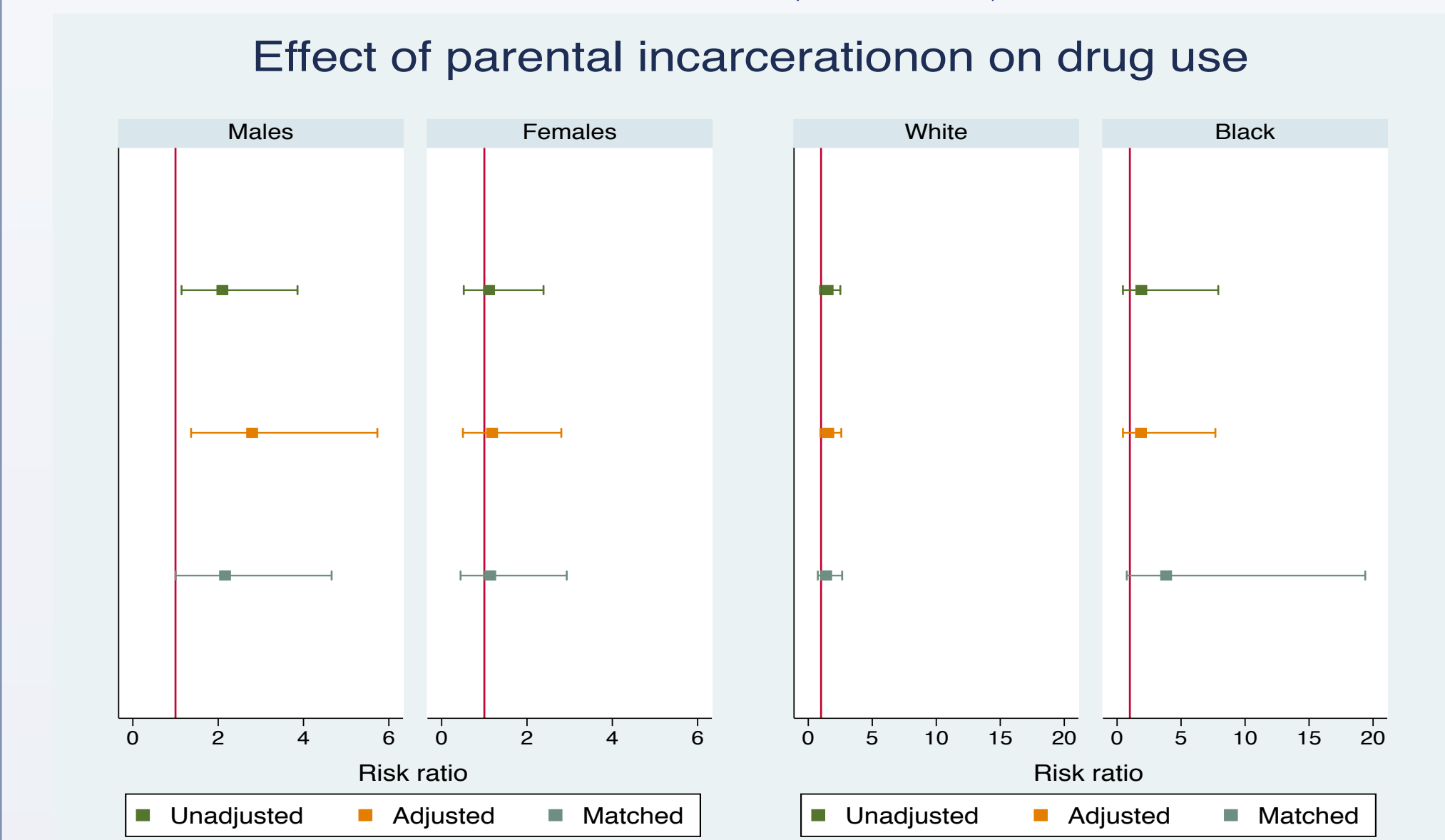


Figure 4. Effect of parental incarceration on ever drug use in the past month stratified by gender and race

DISCUSSION

No significant differences in mental health scores were observed between males and females. However, parental incarceration appears somewhat protective among blacks, although the difference is not statistically significant. Males and Blacks appeared to be at greatest risk of substance abuse, but wide confidence intervals preclude any firm conclusions.

STRENGTHS & LIMITATIONS

- No distinction between maternal and paternal incarceration, nor duration of sentence
- Possibility of unmeasured confounding by parental substance use and mental health
- Novel use of the NLSY97 cohort offers important opportunities to examine lasting effects of childhood exposures.
- Few studies examine long-term impacts of adverse childhood events, such as parental incarceration

CONCLUSIONS

This study adds to a growing body of literature about the intergenerational consequences of incarceration. There is some evidence that parental incarceration is linked with increased drug use among males and Blacks, although the results were not statistically significant.

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