

School health predictors of the school-to-prison pipeline: substance use and developmental risk and resilience factors

Online Appendix

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Table A1. Composition and description of California Healthy Kids Survey measures

Measure	Individual-level questions	Item level scoring	Mean	SD
Substance use/depressed feelings				
Alcohol - 30 days	During the past 30 days, on how many days did you have at least 1 drink of alcohol?	0-5: (0, 1, 2, 3-9, 10-19, 20-30)	0.62	0.59
Binge Drinking - 30 days	During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, i.e., within a couple of hours?	0-5: (0, 1, 2, 3-9, 10-19, 20-30)	0.36	0.51
Cannabis - 30 days	During the last 30 days, on how many days did you use marijuana?	0-5: (0, 1, 2, 3-9, 10-19, 20-30)	0.44	0.69
Cigarette - 30 days	During the last 30 days, on how many days did you smoke a cigarette?	0-5: (0, 1, 2, 3-9, 10-19, 20-30)	0.28	0.64
Depressed	In past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more that you stopped doing some usual activities?	Yes/No	31% Yes	NA
Other drug - 30 days	Max value of: smokeless tobacco, inhalants, cocaine, methamphetamines, or amphetamines, ecstasy, LSD, or other psychedelics, any other illegal drug	0-5: (0, 1, 2, 3-9, 10-19, 20-30)	0.32	0.46
Risk/resilience factors				
Community support	Mean of Outside of home and school there is an adult who really cares about me ...who tells me when I do a good job ...who notices when I am upset about something ...who believes that I will be a success ...who always wants me to do my best ...whom I trust Outside of home and school I am part of clubs, sports teams, church/temple, or other group activities ...am involved in music, art, literature, sports, or a hobby	0-3: (not at all true - very much true)	2.1	0.33
Feel safe in neighborhood	I feel safe in my neighborhood.	1-5: (Strongly disagree to strongly agree)	4	0.87
Feel safe in school	I feel safe in my school.	1-5: (Strongly disagree to strongly agree)	3.48	0.43
Home support	Mean of A parent or adult in my home expects me to follow rules ...is interested in my schoolwork ...believes I will be a success ...talks with me about my problems ...always wants me to do my best ...listens to me when I have something to say At home, I do things that make a difference ...help make decisions with my family	0-3: (not at all true to very much true)	2	0.69
Peer support	Mean of A peer my age really cares about me ...talks with me about my problems ...helps when I'm having a hard time My friends try to do what is right ...do well in school	0-3: (not at all true to very much true)	2	0.66
School support	Mean of At my school, there is a teacher or some other adult who really cares about me ...tells me when I do a good job ...notifies when I'm not there ...always wants me to do my best ...listens when I have something to say ...believes that I will be a success At school, I do interesting activities ...I help decide things like class activities or rules ...I do things that make a difference	0-3: (not at all true to very much true)	1.57	0.23
Student resilience	Mean of self-efficacy, self-awareness, empathy, and problem-solving items I can work out my problems ...do most things I I try ...work with someone who has different opinions than mine There are many things that I do well I feel bad when someone gets their feelings hurt I try to understand what other people go through ...how other people feel and think I try to work out problems by talking or writing about them When I need help I find someone to talk with There is a purpose to my life I understand my moods and feelings I understand why I do what I do	0-3: (not at all true to very much true)	2	0.69
Violence/harassment in school	Mean of During the past 12 months, how many times on school property have you been pushed, shoved, slapped, hit, or kicked by someone who wasn't just kidding around? ...been afraid of being beaten up? ...been in a physical fight? ...had mean rumors or lies spread about you? ...had sexual jokes, comments, or gestures made to you? ...been made fun of because of your looks or the way you talk? ...had your property stolen or deliberately damaged, such as your car, clothing, or books? ...damaged school property on purpose? ...carried a gun? ...carried any other weapon (such as a knife or club)? ...been threatened or injured with a weapon (gun, knife, club, etc.)? ...seen someone carrying a gun, knife, or other weapon? During the past 12 months, how many times on school property were you harassed or bullied because of your race, ethnicity, or national origin? ...your religion? ...your gender? ...because you are gay or lesbian or someone thought you were? ...a physical or mental disability? ...any other reason?	0-3: (0 times, 1 time, 2 to 3 times, 4 or more times)	0.39	0.15

Note: School-level variables were constructed by taking the school mean for all constituent items except depression, which was summarized as proportion "yes".

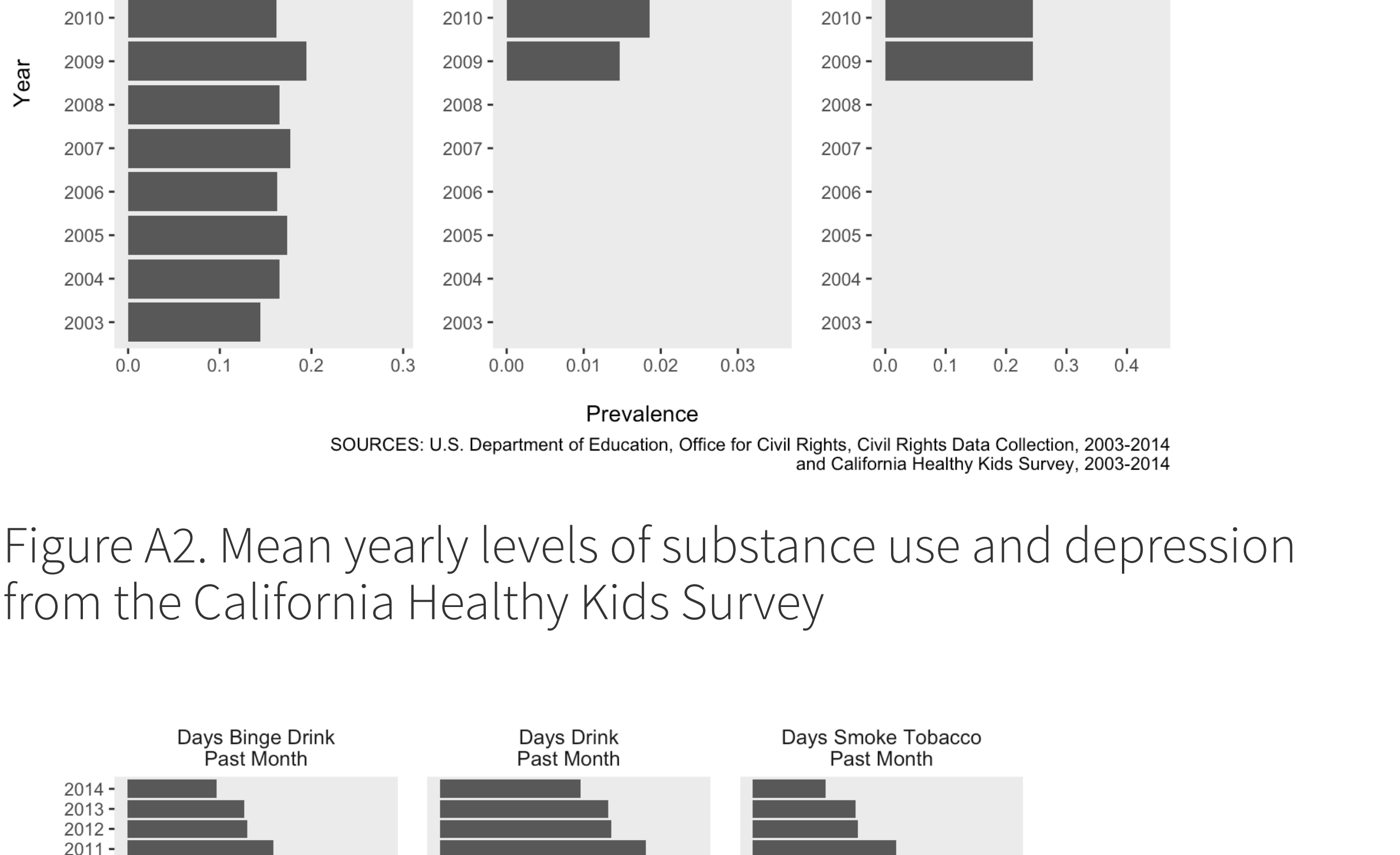
Table A2. Weighted prevalence of school-level discipline and policing measures

This table presents statewide prevalence estimates of school discipline and policing measures from the Civil Rights Data Collection (CRDC), after it was linked with the California Healthy Kids Survey (CHKS).

Variable	Definition	Mean	Min	Max	SD
Police-Involved Discipline (2009-2014)	(Police referrals + school-based arrests) / Total enrollment	0.02	0	5.73	0.11
Out-of-school discipline (2003-2014)	(Expulsions + out-of-school suspensions) / Total enrollment	0.19	0	10.53	0.38
Total school discipline (2009-2014)	(Expulsions + out-of-school suspensions + in-school-suspensions + school-based arrests + police referrals) / Total enrollment	0.32	0	15.09	0.61

Note: SOURCES: U.S. Department of Education, Office for Civil Rights, Civil Rights Data Collection, 2003-2014 and California Healthy Kids Survey, 2003-2014

Figure A1. Weighted mean yearly prevalence of school discipline measures from the Civil Rights Data Collection and the California Healthy Kids Survey



SOURCES: U.S. Department of Education, Office for Civil Rights, Civil Rights Data Collection, 2003-2014 and California Healthy Kids Survey, 2003-2014

Figure A2. Mean yearly levels of substance use and depression from the California Healthy Kids Survey

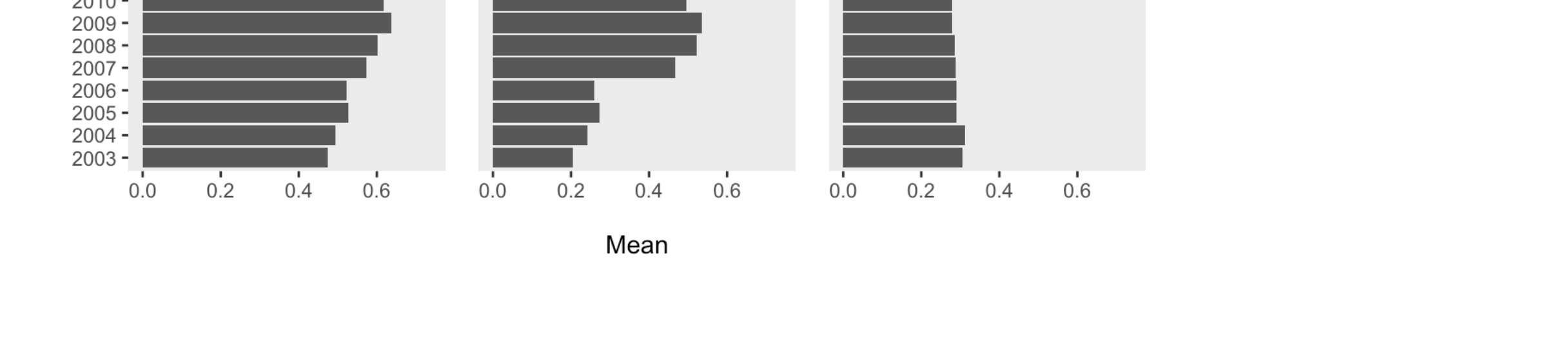


Figure A3. Mean yearly levels of risk and resilience factors from the California Healthy Kids Survey

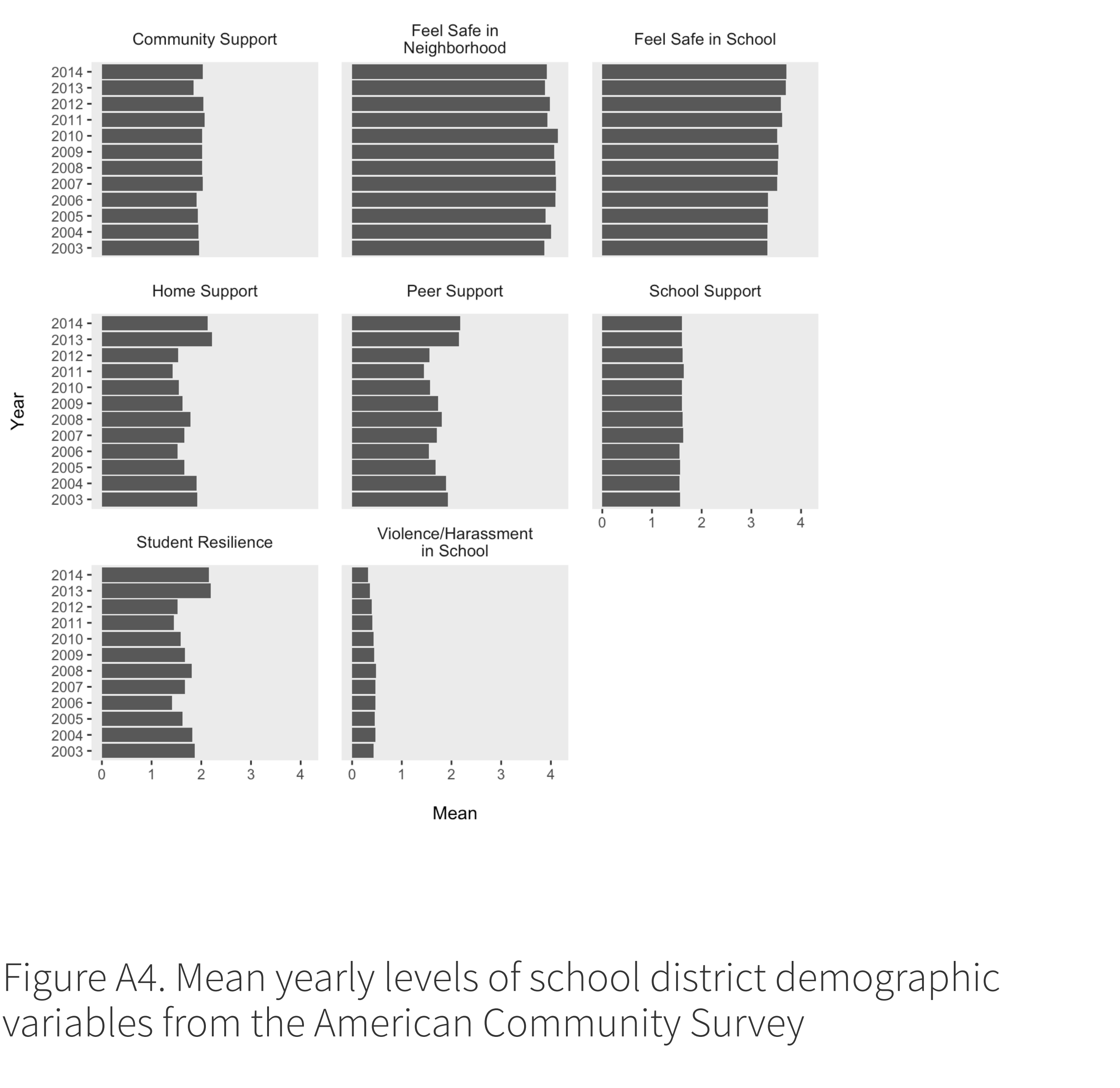


Figure A4. Mean yearly levels of school district demographic variables from the American Community Survey

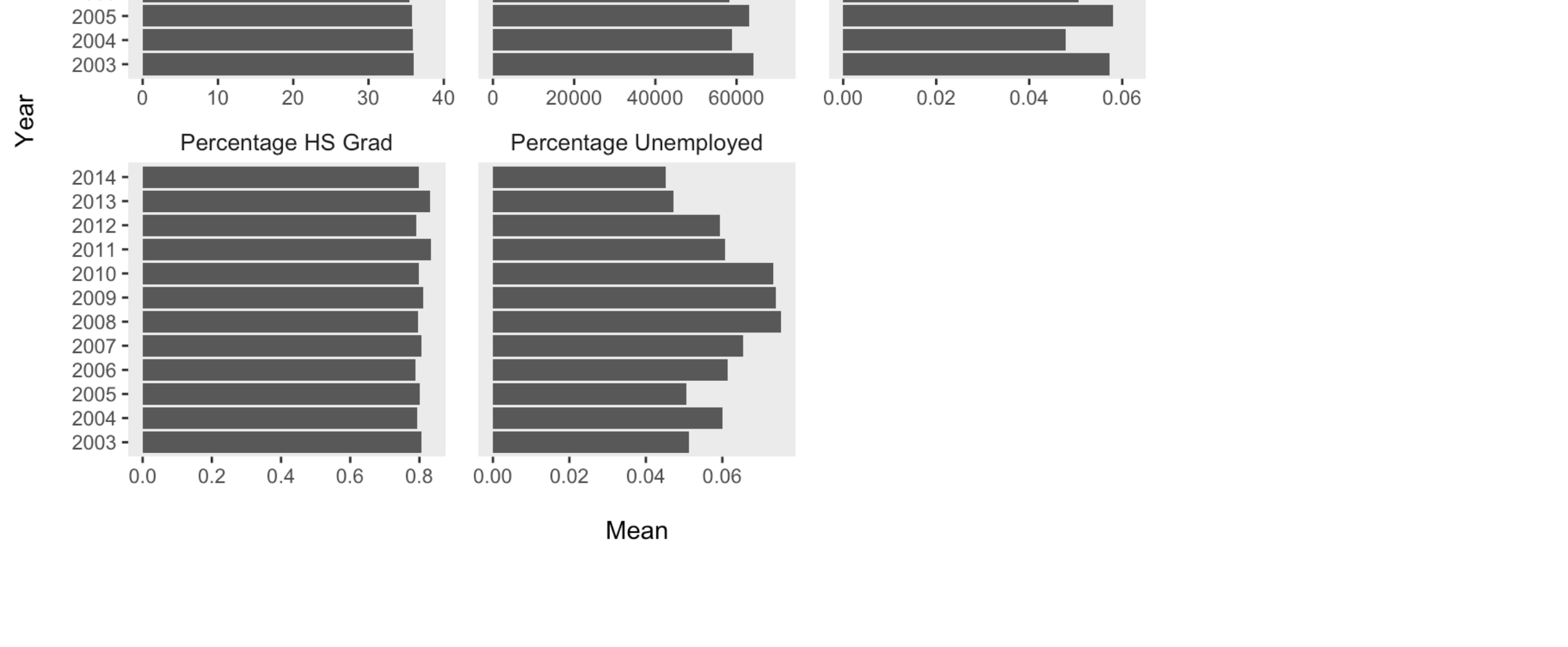


Table A3. Results of 18 linear multi-level models regressing 3 school discipline measures on 6 lagged measures of substance use and depressed feelings

Outcome	Exposure	Unadjusted		Adjusted	
		Estimate	95% CI	Estimate	95% CI
Total school discipline (2009-2014)	Binge Drink Alcohol	0.18	(0.16, 0.2)	0.1614	(0.1401, 0.1828)
	Depressed Past Year	0.02	(0.01, 0.04)	0.0065	(-0.0112, 0.0242)
	Drink Alcohol	0.19	(0.17, 0.21)	0.1694	(0.148, 0.1909)
	Smoke Tobacco	0.16	(0.14, 0.18)	0.1614	(0.1381, 0.1847)
	Use Cannabis	0.21	(0.19, 0.23)	0.2119	(0.1897, 0.2342)
	Use Other Drug	0.17	(0.16, 0.19)	0.1641	(0.1431, 0.1851)
Police-Involved Discipline (2009-2014)	Binge Drink Alcohol	0.02	(0.02, 0.02)	0.0149	(0.0113, 0.0185)
	Depressed Past Year	0.00	(0, 0)	0.0019	(-0.0017, 0.0056)
	Drink Alcohol	0.02	(0.02, 0.02)	0.0171	(0.0136, 0.0206)
	Smoke Tobacco	0.02	(0.02, 0.02)	0.0149	(0.011, 0.0187)
	Use Cannabis	0.02	(0.02, 0.03)	0.0205	(0.017, 0.0241)
	Use Other Drug	0.02	(0.02, 0.03)	0.0179	(0.0143, 0.0216)
Out-of-school discipline (2003-2014)	Binge Drink Alcohol	0.04	(0.03, 0.04)	0.0336	(0.0267, 0.0405)
	Depressed Past Year	0.00	(0, 0)	-0.0019	(-0.0061, 0.0024)
	Drink Alcohol	0.04	(0.03, 0.04)	0.0352	(0.0281, 0.0423)
	Smoke Tobacco	0.04	(0.03, 0.05)	0.0331	(0.0251, 0.0412)
	Use Cannabis	0.05	(0.04, 0.06)	0.0534	(0.0446, 0.0601)
	Use Other Drug	0.03	(0.02, 0.03)	0.0221	(0.0163, 0.028)

Note: Unadjusted models include random intercepts for school and are adjusted for year. Adjusted models include random intercepts for school and are adjusted for year, percent of school Black, median age of school district, percent of district with high school degree or more, percent of district Black, log of the district median income, and the percent of the district unemployed. Total school discipline (2009-2014) includes expulsions, out-of-school suspensions, in-school suspensions, police referrals, school-based arrests Out-of-school discipline (2003-2014) includes expulsions, out-of-school suspensions SOURCES: U.S. Department of Education, Office for Civil Rights, Civil Rights Data Collection, 2003-2014 and California Healthy Kids Survey, 2003-2014

Table A4. Results of 24 linear multi-level models regressing 3 measures of school discipline on 8 lagged measures of risk and resilience

Outcome	Exposure	Unadjusted		Adjusted	
		Estimate	95% CI	Estimate	95% CI
Total school discipline (2009-2014)	Community Support	-0.21	(-0.23, -0.18)	-0.19	(-0.22, -0.16)
	Feel Safe in Neighborhood	0.00	(-0.01, -0.02)	0.00	(-0.01, 0.01)
	Feel Safe in School	-0.09	(-0.11, -0.07)	-0.08	(-0.1, -0.06)
	Home Support	-0.01	(-0.03, 0.01)	-0.02	(-0.04, 0)
	Peer Support	-0.01	(-0.03, 0.01)	-0.02	(-0.03, 0)
	School Support	-0.10	(-0.11, -0.08)	-0.08	(-0.1, -0.06)
Police-Involved Discipline (2009-2014)	Student Resilience	-0.01	(-0.02, 0.01)	-0.01	(-0.03, 0.001)
	Violence/Harassment in School	0.05	(0.04, 0.07)	0.06	(0.04, 0.08)
	Community Support	-0.02	(-0.02, -0.02)	-0.02	(-0.02, -0.01)
	Feel Safe in Neighborhood	0.00	(0, 0)	0.00	(0, 0)
	Feel Safe in School	-0.01	(-0.01, -0.01)	-0.01	(-0.01, 0)
	Home Support	0.00	(0, 0)	0.00	(0, 0)
Out-of-school discipline (2003-2014)	Peer Support	0.00	(0, 0)	0.00	(0, 0)
	School Support	-0.01	(-0.02, -0.01)	-0.01	(-0.01, -0.01)
	Student Resilience	0.00	(0, 0)	0.00	(0, 0)
	Violence/Harassment in School	0.01	(0.01, 0.01)	0.01	(0, 0.01)
	Community Support	-0.02	(-0.03, -0.01)	-0.02	(-0.02, -0.01)
	Feel Safe in Neighborhood	0.00	(0, 0.01)	0.00	(0, 0.01)

Note: Unadjusted models include random intercepts for school and are adjusted for year. Adjusted models include random intercepts for school and are adjusted for year, percent of school Black, median age of school district, percent of district with high school degree or more, percent of district Black, log of the district median income, and the percent of the district unemployed. Total school discipline (2009-2014) includes expulsions, out-of-school suspensions, in-school suspensions, police referrals, school-based arrests Out-of-school discipline (2003-2014) includes expulsions, out-of-school suspensions SOURCES: U.S. Department of Education, Office for Civil Rights, Civil Rights Data Collection, 2003-2014 and California Healthy Kids Survey, 2003-2014