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Assessing Teen Well-Being and Mental Health after the Medi-Cal Expansion

Technical Appendices

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Appendix A. Research Design

TABLE A1

Summary of evidence on Medicaid’s effects on adults’ financial security and mental health

Financial Security Outcome	Key Findings
Medical-related expenses	<ul style="list-style-type: none"> • Decreased financial barriers to health care • Reduced spending on health insurance premiums and copays
Negative financial shocks and debt	<ul style="list-style-type: none"> • Decreased likelihood of “catastrophic” medical expenses • Reduced medical and nonmedical debt • Decreased likelihood of housing eviction • Declines in debt and less debt past-due • Fewer bills in collections • Reductions in bankruptcy filings
Credit scores and future financial opportunities	<ul style="list-style-type: none"> • Reduction in poverty • Improved credit scores • Access to credit at lower interest rates, including car loans and mortgages
Mental Health Outcome	Key Findings
Specific mental health issues	<ul style="list-style-type: none"> • Reduced self-reported depression and poor mental health days • Reduced severe psychological distress
Access to mental health services	<ul style="list-style-type: none"> • Increased official diagnoses of depression (mixed evidence) • Increased utilization of mental health services (mixed evidence) • Increased prescriptions for mental health issues, primarily for depression

SOURCES: Research papers primarily from the peer-reviewed literature; see the Technical Appendix to previous research on the Medi-Cal Expansion and children’s well-being for details (Cha and McConville 2019b).

NOTE: This table summarizes studies that use an experimental or quasi-experimental research design to determine the causal effects of Medicaid or other public health insurance expansion affecting low-income adults on financial security and mental health.

Measures

Adolescent mental health analyses are conducted using two measures from the CHIS. Severe psychological distress is a mental health measure that is not diagnosis-specific, although it incorporates self-assessments of depression and anxiety. In this study, severe psychological distress in the past 30 days is investigated as a binary measure derived from a validated scale called the Kessler 6, or K6 (Kessler et al. 2003). A second measure of mental health was suicidal ideation, or thinking about committing suicide, in the past 12 months. This measure is defined using a combination of CHIS survey questions about ever having had suicidal thoughts and having had them in the past 12 months. Following conventions in the health disparities literature, mental health disparities are defined in this study as statistically significant different odds ratios of mental health outcomes for teens of color (versus white teens), noncitizen teens (versus US citizen teens) and foreign-born teens (versus US-born teens).

Measures of maltreatment are rates of abuse or neglect per 100,000 adolescents aged 12 to 17. Using NCANDS to construct numerators and SEER for denominators, I construct maltreatment rates by county, year, and race. Outcomes studied are any substantiated maltreatment, foster care entry, neglect (the most common type of maltreatment), physical abuse, emotional abuse, or sexual abuse. Less commonly reported types of abuse—sex trafficking, medical neglect, and “other”—are counted towards any maltreatment but not analyzed separately.

NCANDS reporting data contributed to the figures if the reports were substantiated through investigation by child welfare authorities, if child race was coded to one of six race/ethnic groups (Asian, Black, Latino, Native American, or white), and if both the date and county of report were nonmissing. Children with multiple substantiated maltreatment reports within calendar years are counted only once. Maltreatment disparities are defined in this study as statistically significant differences in child welfare outcomes predicted by race dummy variables for teens of color (with white teens the excluded group).

Models

Mental health disparities are analyzed using individual-level data. I use logistic regression, and estimate odds ratios comparing disadvantaged groups to an excluded baseline group. An odds ratio of 1 means that the two groups being compared have the same odds of a negative mental health outcome, meaning there is no disparity. Odds ratios are estimated for people of color (Asian, Black, Latino, Native American) relative to white teens, noncitizen status teens (legal permanent residents or LPRs, who have green cards, and non-LPRs) relative to US citizen teens (including naturalized citizens), and foreign-born teens relative to US-born. Regressions are adjusted using individual-level age, sex, and residence in a rural county. There was insufficient variation in education level of the household adult in the survey to include that variable as a control. I use the CHIS replicate survey weights to calculate conservative jackknife standard errors, and require $p < 0.05$ for reporting significance.

Disparities in rates of adolescent maltreatment are modeled using ordinary least-squares and dummy variables for people of color (Asian, Black, Latino, Native American), with white teens being the excluded group. There is high variation in the racial makeup of counties within California, so I focus on changes at the county-month level for teens of different races. The unit of analysis is a county-month-race rate, and the regression is adjusted using aggregate measures; covariates are unemployment rates by county-month, month fixed effects to account for seasonality, and county fixed effects. Since the unit of analysis is an average, I calculate conventional standard errors. As with the mental health models, $p < 0.05$ is required to be significant.

The study years are between 2011 and 2018 (all statistical analyses) or 2017 (for annual maltreatment trends only). NCANDS data are organized by federal fiscal year, but the study period is defined using the calendar date when alleged abuse was reported to child welfare authorities. For both types of outcomes, models are estimated for the pre-Medi-Cal period (2011–2013) and the post period (2014 or after); all models include year fixed effects. To compare disparities in the two periods, I estimate a pooled model over all study years that includes a post-policy indicator of 2014 and later years, and interaction terms for each characteristic under analysis with the post indicator (Asian-by-post, Black-by-post, etc.). Significance of the interaction is used to interpret whether disparities differ before and after the Medi-Cal expansion. Since the data analyzed cover only California, these analyses do not include a control group (e.g., areas that did not expand Medicaid), and must be interpreted as associations in two time periods rather than as quasi-experimental evidence of a causal relationship.

Appendix Table A2 summarizes the features of the analysis plan for adolescents by outcome type.

TABLE A2

Summary of adolescent well-being analyses

Domain	Characteristics
Mental health	<ul style="list-style-type: none"> • Data: California Health Interview Survey • Years: 2011–2018 • Outcomes: severe psychological distress, suicidal thoughts • Disparities investigated: race/ethnicity, nativity, citizenship • Analysis: Logistic regression • Unit of analysis: individual teens ages 12–17 • Number of observations: 7513
Maltreatment	<ul style="list-style-type: none"> • Data: National Child Abuse and Neglect Data System Child Files • Years: 2011–2018 • Outcomes: any substantiated maltreatment, neglect, physical abuse, emotional abuse, sexual abuse • Disparities investigated: race/ethnicity • Analysis: Ordinary least-squares regression • Unit of analysis: county-month-race rates per 100,000 teens ages 12–17 • Number of observations: 9487

NOTE: For the maltreatment analyses, county-month-race rates are included whenever they are nonempty. If, for example, there are no reports of maltreated teens of a given race in a county-month cell, that observation is excluded rather than being set to 0. This prevents counties with limited racial diversity from being interpreted to have especially low rates of maltreatment for sparsely represented races.

Appendix B. Supplemental Tables on Teen Mental Health

Study Sample

To ensure a consistent analysis group for the mental health outcomes in the California Health Interview Survey, I dropped 13 survey observations with missing values for outcome or control variables, resulting in a total sample size of 7,513 teens, with 4,000 before the Medi-Cal expansion and 3,513 after.

TABLE B1

Adolescent summary statistics, before and after the Medi-Cal expansion

	Pre-expansion	Post-expansion	All years
Asian	0.105 (0.00614)	0.109 (0.00566)	0.107 (0.00411)
Black	0.0536 (0.00429)	0.0483 (0.00441)	0.0503 (0.00302)
Latino	0.465 (0.0108)	0.507 (0.00485)	0.491 (0.00467)
White	0.329 (0.00832)	0.279 (0.00493)	0.298 (0.00396)
Pacific Islander	0.00394 (0.00197)	0.00348 (0.00120)	0.00366 (0.00106)
Native American	0.00510 (0.00150)	0.00355 (0.00167)	0.00414 (0.00117)
Other race	0.038 (0.00340)	0.0497 (0.00418)	0.0453 (0.00257)
No green card	0.0471 (0.00498)	0.0319 (0.00572)	0.0377 (0.00406)
Has green card	0.0331 (0.00398)	0.0329 (0.00661)	0.0330 (0.00459)
US citizen	0.920 (0.00604)	0.935 (0.00885)	0.929 (0.00632)
Foreign-born	0.117 (0.00586)	0.115 (0.0108)	0.116 (0.00730)
US-Born	0.883 (0.00586)	0.885 (0.0108)	0.884 (0.00730)
Age in years	14.57 (0.0187)	14.48 (0.0416)	14.52 (0.0266)
Female (%)	0.488 (2.38e-08)	0.490 (0.00106)	0.489 (0.000653)
Rural county residence (%)	0.0183 (0.000192)	0.0204 (0.00338)	0.0196 (0.00209)
Severe psych distress, past 30 days (%)	0.0372 (0.00505)	0.0512 (0.00897)	0.0459 (0.00593)
Suicidal thoughts, past 12 mo. (%)	0.0460 (0.00474)	0.0574 (0.00912)	0.0531 (0.00605)
Covered by Medi-Cal (%)	0.284 (0.0104)	0.410 (0.0176)	0.362 (0.0110)
Uninsured for part of last 12 mo. (%)	0.0790 (0.00647)	0.0473 (0.00673)	0.0594 (0.00525)

Under 200% FPL (%)	0.440	0.443	0.442
	(0.0103)	(0.0153)	(0.00978)
N	4000	3513	7513

SOURCE: California Health Interview Survey 2011–2018. Weighted mean and jackknife standard error listed.

NOTE: Pacific Islander, Native American, and Other race categories reported here for completeness, but study estimates for these groups are either not possible or omitted due to small sample size (Pacific Islander, Native American) or interpretability (Other race).

TABLE B2

Adolescent average outcomes, by race

	Asian	Black	Latino	White
Severe psych distress, past 30 days (%)	0.0135	0.0420	0.0516	0.0436
	(0.00531)	(0.0200)	(0.00953)	(0.00792)
Suicidal thoughts, past 12 mo. (%)	0.0258	0.0445	0.0509	0.06470
	(0.0129)	(0.0201)	(0.00972)	(0.0111)
Covered by Medi-Cal (%)	0.258	0.484	0.502	0.167
	(0.0417)	(0.0561)	(0.0175)	(0.0141)
Uninsured for part of last 12 mo. (%)	0.0396	0.0284	0.0786	0.0416
	(0.0137)	(0.0117)	(0.00823)	(0.00849)
Under 200% FPL (%)	0.292	0.556	0.631	0.193
	(0.0375)	(0.0559)	(0.0173)	(0.0138)
N	634	260	3187	2929

SOURCE: California Health Interview Survey 2011–2018. Weighted mean and jackknife standard error listed.

TABLE B3

Adolescent average outcomes, by citizenship status and nativity

	No green card	Has green card	US citizen	Foreign-born	US-born
Severe psych distress, past 30 days (%)	0.0104	0.0237	0.0481	0.0203	0.0492
	(0.00439)	(0.0236)	(0.00630)	(0.0130)	(0.00655)
Suicidal thoughts, past 12 mo. (%)	0.0217	0.00960	0.0559	0.0137	0.0582
	(0.0143)	(0.00575)	(0.00649)	(0.00607)	(0.00676)
Covered by Medi-Cal (%)	0.516	0.520	0.350	0.433	0.352
	(0.0590)	(0.0651)	(0.0112)	(0.0363)	(0.0107)
Uninsured for part of last 12 mo. (%)	0.238	0.101	0.0507	0.122	0.0511
	(0.0407)	(0.0320)	(0.00534)	(0.0177)	(0.00565)
Under 200% FPL (%)	0.810	0.598	0.422	0.596	0.422
	(0.0560)	(0.0658)	(0.0113)	(0.0326)	(0.0114)
N	255	233	7025	817	6696

SOURCE: California Health Interview Survey 2011–2018. Weighted mean and jackknife standard error listed.

Findings

Appendix Table B4 shows teen outcomes modeled on a pre/post measure of the Medi-Cal expansion. There were no significant changes to teen mental health, for either severe psychological distress or for suicidal thoughts. Medi-Cal did affect these teens, though: their own coverage was more likely to be from Medi-Cal (OR=1.75, $p<0.001$) and they were far less likely to have been uninsured for part of the previous year (OR = 0.58, $p<0.001$).

Technical Appendix Tables B5, B6, and B7 report the main findings on adolescent mental health for groups defined by race/ethnicity, citizenship and green card status, and US vs. other country of birth, respectively. Each table presents model estimates for two outcomes: severe psychological distress and thoughts of suicide. The first of three columns for each outcome shows estimates of group differences for the pre-ACA period while the second column shows estimates for the post-ACA period. The third column presents the interaction between an indicator for being a member of the group under consideration and a dummy variable for the years 2014–2018. The small Native American teen sample, combined with low variation in the outcome variables for this group, prevented an analysis of Native American disparities in mental health. In Table B5, the odds that Asian, Black, and Latino teens experienced severe psychological distress in the past 30 days or considered suicide in the past year were indistinguishable from white teens’ odds. This was consistently the case, before and after the Medi-Cal expansion, for all of the race groups. Moreover, none of the interaction terms indicates significant differences between the two periods for any of the groups.

Although the odds of poor mental health for teens of color were statistically the same as for white teens, estimates tended to show better mental health among noncitizen and foreign-born teens. Appendix Table B5 presents odds ratios of mental health outcomes for two groups of noncitizens: those with green cards, and those without. Teens in both groups have significantly lower odds of severe psychological distress compared to US citizens. Green card holding teens had less than one-sixth the odds (OR=0.14, $p<0.01$), and teens without green cards had less than half the odds (OR=0.45, $p<0.05$) of severe psychological distress compared to citizen teens prior to Medi-Cal expansion. The estimates change after expansion, but the interaction terms suggest that noncitizen teens have lower odds of severe psychological distress over the study period as a whole. For the more serious outcome of suicidal ideation, teens with green cards do not have significantly different odds compared to citizen teens in the period prior to Medi-Cal expansion, although they have about one-fiftieth the odds (OR=0.018, $p<0.01$) after the policy change, with this difference likely to be a significant change. Among teens without green cards, lower odds of suicidal thoughts compared to citizens in the early period (OR=0.14, $p<0.001$) was not found after the Medi-Cal expansion, but the estimates from the two periods are not different from each other.

Appendix Table B6 shows the analyses by nativity. Foreign-born teens have about a quarter the odds of severe psychological distress (OR=0.22, $p<0.001$) or suicidal thoughts (OR=0.24, $p<0.001$) compared to US-born teens prior to the Medi-Cal expansion. These figures change after Medi-Cal expansion, but the interaction terms indicate that the mental health advantage is present for foreign-born teens over the full study period. For mental health disparities among adolescents, race did not matter as much as citizenship or nativity.

TABLE B4

Teen mental health stayed the same, Medi-Cal coverage increased, and uninsurance decreased after Medi-Cal expansion

	Severe psych distress	Considered suicide	Medi-Cal coverage	Uninsured part of last year
Post expansion	1.397	1.263	1.752***	0.579***
	(0.327)	(0.245)	(0.167)	(0.091)
Depvar Mean	0.046	0.053	0.362	0.059
Observations	7513	7513	7513	7513

SOURCE: California Health Interview Survey 2011–2018.

NOTES: Odds ratio of each outcome after Medi-Cal expansion (2014–2018) relative to pre-policy (2011–2013), jackknife standard errors in parentheses. No covariates included. *** $p<0.001$

TABLE B5

Adolescent mental health outcomes for people of color relative to whites before and after Medi-Cal expansion

	Severe psych distress (30 days)			Considered suicide (12 mo.)		
	Pre	Post	Group X Post	Pre	Post	Group X Post
Asian	0.754	0.026	0.033	0.526	0.304	0.555
	(0.352)	(0.127)	(0.163)	(0.279)	(0.282)	(0.553)
Black	0.798	1.043	1.104	0.712	0.655	0.807
	(0.445)	(0.996)	(1.213)	(0.397)	(0.499)	(0.711)
Latino	0.792	1.408	1.679	0.794	0.706	0.864
	(0.213)	(0.573)	(0.819)	(0.205)	(0.290)	(0.417)
2012	1.180			1.140		
	(0.328)			(0.321)		
2013	2.190**			1.442		
	(0.636)			(0.416)		
2015		1.002			1.020	
		(0.456)			(0.356)	
2016		0.227**			1.220	
		(0.113)			(0.663)	
2017		0.620			0.342	
		(0.328)			(0.190)	
2018		1.576			0.614	
		(0.856)			(0.300)	
Depvar Mean	0.037	0.051	0.046	0.046	0.057	0.053
Observations	4000	3513	7513	4000	3513	7513

SOURCE: California Health Interview Survey 2011–2018.

NOTES: Includes adolescents aged 12–17. Odds ratios relative to white race reported, jackknife standard errors in parentheses. "Pre" and "Post" report estimates by race for 2011–2013 and post-2013 time periods, while "Group X Post" reports estimates for race-by-post-2013 dummy variables from analyses of all years. Covariates include age, sex, and rural/urban status. Year fixed effects included in "Pre" and "Post" models, and a dummy for post-2013 time is included in pooled models reported in "Group X Post." *p<0.05 **p<0.01 ***p<0.001

TABLE B6

Adolescent mental health outcomes for green card holders and nonholders compared to US citizens before and after Medi-Cal expansion

	Severe psych distress (30 days)			Considered suicide (12 mo.)		
	Pre	Post	Group X Post	Pre	Post	Group X Post
Has green card	0.139** (0.093)	0.626 (2.098)	4.614 (15.846)	0.470 (0.280)	0.018** (0.025)	0.042* (0.066)
No green card	0.448* (0.168)	0.035 (0.067)	0.088 (0.169)	0.136*** (0.079)	0.512 (0.510)	3.608 (4.431)
2012	1.181 (0.341)			1.141 (0.318)		
2013	2.131* (0.639)			1.404 (0.402)		
2015		0.974 (0.435)			0.982 (0.334)	
2016		0.220** (0.109)			1.188 (0.641)	
2017		0.601 (0.317)			0.327* (0.181)	
2018		1.559 (0.821)			0.580 (0.285)	
Depvar Mean	0.037	0.051	0.046	0.046	0.057	0.053
Observations	4000	3513	7513	4000	3513	7513

SOURCE: California Health Interview Survey 2011–2018.

NOTES: Includes adolescents aged 12–17. Odds ratios relative to US citizens reported, jackknife standard errors in parentheses. “Pre” and “Post” report estimates by race for 2011–2013 and post-2013 time periods, while “Group X Post” reports estimates for citizenship-group-by-post-2013 dummy variables from analyses of all years. Covariates include age, sex, and rural/urban status. Year fixed effects included in “Pre” and “Post” models, and a dummy for post-2013 time is included in pooled models reported in “Group X Post.” *p<0.05 **p<0.01 ***p<0.001

TABLE B7

Adolescent mental health outcomes for foreign-born relative to US-born before and after Medi-Cal expansion

	Severe psych distress (30 days)			Considered suicide (12 mo.)		
	Pre	Post	Group X Post	Pre	Post	Group X Post
Foreign-born	0.222***	0.463	2.135	0.241***	0.197*	0.849
	(0.076)	(0.486)	(2.389)	(0.097)	(0.148)	(0.777)
2012	1.185			1.144		
	(0.342)			(0.321)		
2013	2.147*			1.413		
	(0.644)			(0.405)		
2015		0.974			0.966	
		(0.447)			(0.331)	
2016		0.221**			1.156	
		(0.109)			(0.622)	
2017		0.599			0.321*	
		(0.313)			(0.178)	
2018		1.546			0.567	
		(0.819)			(0.279)	
Depvar Mean	0.037	0.051	0.046	0.046	0.057	0.053
Observations	4000	3513	7513	4000	3513	7513

SOURCE: California Health Interview Survey 2011–2018.

NOTES: Includes adolescents aged 12–17. Odds ratios relative to US-born adolescents reported, jackknife standard errors in parentheses. "Pre" and "Post" report estimates by race for 2011–2013 and post-2013 time periods, while "Group X Post" reports estimates for foreign-born-by-post-2013 dummy variables from analyses of all years. Covariates include age, sex, and rural/urban status. Year fixed effects included in "Pre" and "Post" models, and a dummy for post-2013 time is included in pooled models reported in "Group X Post." *p<0.05 **p<0.01 ***p<0.001

TABLE B8

Adolescent Kessler 6 scores for adolescents of color relative to whites, by Medi-Cal expansion

	Kessler 6 score
Asian	-0.042 (0.328)
Black	-0.111 (0.473)
Latino	0.337 (0.203)
Post Medi-Cal expansion	-0.570 (0.573)
Asian x Post	-0.094 (0.887)
Black x Post	-0.865* (0.420)
Latino x Post	0.747* (0.302)
Depvar Mean	4.350
Observations	7513

SOURCE: California Health Interview Survey 2011–2018.

NOTES: Includes adolescents aged 12–17. Coefficients from ordinary least-squares models comparing teens of color to white teens, jackknife standard errors in parentheses. “Post” refers to the post-2013 time period, while “Race X Post” reports estimates for interaction terms of each race by Post. Covariates include age, sex, and rural/urban status. *p<0.05 **p<0.01 ***p<0.001

TABLE B9

Adolescent Kessler 6 scores for noncitizen adolescents relative to US citizen adolescents, by Medi-Cal expansion

	Kessler 6 score
Has green card	-0.458
	(0.425)
No green card	-0.616
	(0.359)
Post Medi-Cal expansion	0.082
	(0.915)
Green card x Post	-0.594
	(0.705)
No green card x Post	0.279
	(0.186)
Depvar Mean	4.350
Observations	7513

SOURCE: California Health Interview Survey 2011–2018.

NOTES: Includes adolescents aged 12–17. Coefficients from ordinary least-squares models comparing noncitizen teens to US citizen teens, jackknife standard errors in parentheses. “Post” refers to the post-2013 time period, while “Green card/no green card X Post” reports estimates for interaction terms. Covariates include age, sex, and rural/urban status. *p<0.05 **p<0.01 ***p<0.001

TABLE B10

Adolescent Kessler 6 scores for foreign-born adolescents relative to US-born adolescents, by Medi-Cal expansion

	Kessler 6 score
Foreign-born	-0.585*
	(0.247)
Post Medi-Cal expansion	0.368
	(0.534)
Foreign-born x Post	0.229
	(0.193)
Depvar Mean	4.350
Observations	7513

SOURCE: California Health Interview Survey 2011–2018.

NOTES: Includes adolescents aged 12–17. Coefficients from ordinary least-squares models comparing foreign-born teens to US-born teens, jackknife standard errors in parentheses. “Post” refers to the post-2013 time period, while “Foreign-born X Post” reports estimates for interaction term. Covariates include age, sex, and rural/urban status. *p<0.05 **p<0.01 ***p<0.001

TABLE B11

Adolescent mental health outcomes for groups especially affected by the COVID-19 crisis, by county-year unemployment rates, over a time series including the previous recession (2005, 2007, 2009, 2011–2018)

	Black		Latino		No green card		Low-income	
	Severe psych distress	Suicidal thoughts						
Unemployment	0.025	0.002	-0.001	0.001	0.002	0.093	0.000	0.017
	(0.019)	(0.072)	(0.012)	(0.015)	(0.009)	(0.075)	(0.014)	(0.027)
2005	0.156*		0.022		0.100*		0.020	
	(0.076)		(0.044)		(0.049)		(0.056)	
2007	0.138+		-0.008		0.025		-0.018	
	(0.077)		(0.046)		(0.044)		(0.058)	
2009	-0.064		0.019		0.022		-0.008	
	(0.055)		(0.032)		(0.022)		(0.035)	
2011	-0.058	0.073	-0.003	-0.030	-0.003	-0.236	-0.026	-0.046
	(0.070)	(0.185)	(0.040)	(0.044)	(0.021)	(0.202)	(0.046)	(0.080)
2012	-0.070	0.055	0.002	-0.015	-0.004	-0.127	-0.018	-0.031
	(0.043)	(0.107)	(0.026)	(0.029)	(0.016)	(0.109)	(0.028)	(0.044)
2014	0.106	0.090	0.050*	0.010	-0.001	0.157	0.029	0.038
	(0.066)	(0.116)	(0.025)	(0.031)	(0.017)	(0.099)	(0.034)	(0.043)
2015	0.039	0.043	0.034	0.019	0.018	0.377	0.026	0.055
	(0.054)	(0.206)	(0.043)	(0.045)	(0.033)	(0.320)	(0.056)	(0.070)
2016	0.041	0.102	-0.028	0.020	0.010	0.287	-0.031	0.116
	(0.079)	(0.255)	(0.041)	(0.072)	(0.038)	(0.251)	(0.052)	(0.133)
2017	0.059	0.047	-0.013	-0.032	0.001	0.431	-0.028	0.051
	(0.087)	(0.328)	(0.048)	(0.063)	(0.044)	(0.349)	(0.058)	(0.109)
2018	0.254	0.059	0.027	-0.018	0.003	0.560	0.048	0.061
	(0.245)	(0.370)	(0.055)	(0.075)	(0.053)	(0.449)	(0.071)	(0.127)
Depvar Mean	0.047	0.047	0.042	0.053	0.018	0.022	0.047	0.057
Observations	660	245	6848	3053	670	249	6570	2994

SOURCE: California Health Interview Survey 2005, 2007, 2009, 2011–2018 (data on suicidal thoughts not available in 2005 or 2007).

NOTES: Includes adolescents aged 12–17. Odds ratios from logistic regression models comparing Black/Latino teens to white teens, immigrant teens without a green card to US citizen teens, and low-income (<200% FPL) teens to higher income teens; jackknife standard errors in parentheses. *p<0.05 **p<0.01 ***p<0.001

Appendix C. Supplemental Tables on Teen Abuse and Neglect

Study Sample

The NCANDS maltreatment data are organized at the record level, where a record is a unique child-report pair. In California, the volume of records drops off around August of 2018. Since these administrative data tend to be adjusted by reporting agencies in later months or years, I exclude September through December of 2018, anticipating that the numbers will change in the future. There are 972,657 records involving adolescents aged 12 to 17 with reporting dates between January 2011 and August 2018. I drop 117 duplicates, yielding 972,540 records. In 155,744 instances, a given child is the subject of more than one report in a calendar year; dropping duplicates yields 816,796 unique children per year. An additional 54,216 children lack information on race and 12,213 have race information but lack a county of report; these observations are dropped, leaving 750,355. The vast majority of these reports (621,809) are not substantiated; dropping these observations yields a total underlying sample of 128,558.

The unit of study is at the county-month-race level. Counties that do not have a teen the subject of a substantiated maltreatment report for each of the five races in every year will have missing observations for the affected race-months. (I do not code zeroes for these cases since some race groups have essentially no representation in some counties.) Of the possible 26,680 possible county-month-race cells (58 counties x 8 years x 12 months most years / 8 months in 2018 x 5 races), 17,193 are empty cells. About a quarter (4,191) are due to having no substantiated reports for Asian teens, about a fifth (3,566) for no Black teens, 14 percent (2,391) for no Latino teens, over a quarter (4,713) for no Native American teens, and the remaining 14 percent (2,332) for no white teens. The resulting sample size is 9,487 observations, with 3,771 before the Medi-Cal expansion and 5,716 after.

TABLE C1

County-month-race adolescent maltreatment summary statistics, before and after the Medi-Cal expansion

	Pre-expansion	Post-expansion	All years
Any type of maltreatment	36.24	39.85	38.41
	104.99	110.84	108.56
Foster care entry	16.73	20.10	18.76
	75.33	86.89	82.50
Neglect	29.07	33.65	31.83
	96.17	105.23	101.74
Physical abuse	7.45	6.56	6.91
	43.22	40.30	41.49
Emotional abuse	8.17	8.85	8.58
	58.20	56.04	56.91
Sexual abuse	3.66	3.89	3.80
	35.95	34.53	35.10
County-month unemployment rate	11.13	6.57	8.38
	3.75	3.34	4.16
N	3771	5716	9487

SOURCE: National Child Abuse and Neglect Data System Child File Jan 2011–Aug 2018. Mean and standard deviation listed.

NOTE: Units described are California county-month-race rates per 100,000 adolescents ages 12–17; units are not weighted by county populations. If no substantiated reports occurred in a county-month cell for a particular race, that cell is dropped from the analysis.

Findings

Appendix Table C2 shows how different child maltreatment outcomes changed following the Medi-Cal expansion, using a pre/post measure of the policy change. Most of the outcomes had no significant changes, but neglect victims increased by about 4.5 teens per 100,000 ($p < 0.05$) after Medi-Cal expansion.

Asian, Black, and Native race is associated with higher victimization compared to white adolescents (Appendix Table C4). In the period prior to Medi-Cal expansion, Asian race was associated with 32 additional victims per 100,000 relative to whites ($p < 0.001$), Black race with 64 per 100,000 ($p < 0.001$) more substantiated reports, and Native American race with a 282 more victims per 100,000 ($p < 0.001$). The total number of Native American teens in the state is quite small, so small changes in numbers of substantiated victims can produce large effects. The rates for Latino race were not distinguishable from the baseline white teens' rates, and only Latino teens had a significant decline in maltreatment disparities following Medi-Cal expansion; no other groups saw changes.

Analyzing neglect, which constitutes a large majority of substantiated maltreatment reports, produces findings similar to those for overall maltreatment (Table C3). In the period before Medi-Cal expansion, Asian race predicted 26 more neglect victims per 100,000 ($p < 0.001$), Black race predicted 50 more ($p < 0.001$), and Native American race predicted 235 more ($p < 0.001$) compared to white race. Latino ethnicity was again not distinguishable from white, and Latino teens had a decrease in neglect disparities following the Medi-Cal expansion.

For other forms of maltreatment—physical, emotional, and sexual abuse—Asian, Black, and Native American race still predicted higher rates of victims. Effect sizes for Native American race far exceed those for Asian and Black race. Latino ethnicity produced effects indistinguishable that rates for white teens, except for emotional abuse—Latino teens were more likely to be victims of emotional abuse prior to the Medi-Cal expansion. In general, disparities were similar after the expansion for all race/ethnic groups except for Latinos, who had a decrease in disparity.

TABLE C2

Most teen maltreatment was unchanged after Medi-Cal expansion, but neglect increased

	Any substantiated maltreatment	Foster care entry	Neglect	Physical abuse	Emotional abuse	Sexual abuse
Post expansion	3.607	3.370	4.573*	-0.889	0.678	0.228
	(2.214)	(1.819)	(2.108)	(0.913)	(1.143)	(0.712)
Depvar Mean	38.412	18.763	31.827	6.909	8.579	3.801
Observations	9487	9487	9487	9487	9487	9487

SOURCE: National Child Abuse and Neglect Data System Jan 2011–Aug 2018.

NOTES: Unit of analysis is county-month-race rates of each maltreatment type per 100,000 children. Underlying data are restricted to adolescents aged 12–17 with substantiated reports of maltreatment. If no substantiated reports occurred in a county-month cell for a particular race, that cell is dropped from the analysis. Estimates are ordinary least-squares coefficients, with county-level clustered standard errors in parentheses. * $p < 0.05$

TABLE C3

Adolescent abuse and neglect outcomes for teens of color relative to whites before and after Medi-Cal expansion

	Neglect			Physical abuse			Emotional abuse			Sexual abuse		
	Pre	Post	Group X Post	Pre	Post	Group X Post	Pre	Post	Group X Post	Pre	Post	Group X Post
Asian	26.081*** (6.062)	25.558*** (6.394)	-1.824 (1.783)	7.950*** (2.219)	6.021** (1.703)	-0.803 (1.121)	9.572*** (2.597)	8.870*** (2.404)	0.656 (1.494)	3.871** (1.205)	4.620* (2.025)	0.524 (1.717)
Black	49.873*** (10.355)	58.847*** (13.288)	7.686 (4.912)	14.951*** (3.590)	12.367*** (2.699)	-1.563 (2.488)	12.621** (3.644)	13.432** (4.034)	1.523 (3.091)	6.425* (2.814)	6.256** (2.148)	-0.545 (2.207)
Latino	-0.057 (2.770)	-2.771 (3.111)	-2.461** (0.838)	0.899 (0.576)	-0.149 (0.438)	-0.747* (0.288)	1.635* (0.793)	0.651 (0.703)	-0.675 (0.527)	0.596 (0.501)	-0.072 (0.402)	-0.677 (0.429)
Native	235.482*** (42.128)	245.592*** (41.582)	8.083 (21.654)	52.196** (15.528)	43.184*** (8.132)	-7.292 (13.336)	73.772*** (19.988)	67.489*** (15.459)	-4.524 (15.477)	30.596** (10.216)	23.426*** (5.358)	-6.382 (11.129)
2012	0.068 (3.650)			-2.383 (2.339)			2.664 (3.451)			1.632 (1.610)		
2013	-7.516 (7.877)			-1.246 (2.705)			5.403 (5.091)			-0.439 (1.960)		
2015		1.778 (2.760)			2.006 (2.386)			-2.905 (2.596)			0.865 (1.277)	
2016		2.868 (4.904)			3.587 (3.004)			-7.100 (3.736)			3.699 (2.111)	
2017		1.564 (5.896)			8.427* (3.455)			-9.082 (5.276)			6.009* (2.477)	
2018		1.154 (9.534)			9.172 (4.579)			-14.170 (7.092)			5.128 (3.096)	
Depvar Mean	29.072	33.645	31.827	7.445	6.556	6.909	8.171	8.848	8.579	3.664	3.892	3.801
Observations	3771	5716	9487	3771	5716	9487	3771	5716	9487	3771	5716	9487

SOURCE: National Child Abuse and Neglect Data System Jan 2011–Aug 2018.

NOTES: Unit of analysis is county-month-race rates of each maltreatment type per 100,000 children. Underlying data are restricted to adolescents aged 12–17 with substantiated reports of maltreatment. If no substantiated reports occurred in a county-month cell for a particular race, that cell is dropped from the analysis. Estimates are ordinary least-squares coefficients, with county-level clustered standard errors in parentheses. “Pre” and “Post” report estimates by race for 2011–2013 and post-2013 time periods, while “Group X Post” reports estimates for race-by-post-2013 dummy variables from analyses of all years. Covariates include unemployment rates by county-month, and county, percent race by county, and calendar month fixed effects. Year fixed effects included in “Pre” and “Post” models, and a dummy for post-2013 time is included in pooled models reported in “Group X Post.” *p<0.05 **p<0.01 ***p<0.001

TABLE C4

Adolescent maltreatment and foster care entry for people of color relative to whites before and after Medi-Cal expansion

	Any substantiated maltreatment			Foster care entry		
	Pre	Post	Group X Post	Pre	Post	Group X Post
Asian	32.025*** (7.352)	31.368*** (7.249)	-1.497 (1.957)	13.544** (3.923)	14.627*** (4.064)	-1.607 (1.914)
Black	64.113*** (13.200)	68.936*** (14.366)	4.095 (5.089)	28.761*** (7.383)	40.567*** (9.256)	9.758 (5.714)
Latino	0.993 (3.137)	-2.505 (3.644)	-3.090** (1.059)	0.772 (1.666)	-1.691 (2.121)	-1.398* (0.538)
Native	282.483*** (47.760)	285.484*** (45.170)	3.107 (20.533)	141.794*** (32.360)	146.515*** (29.504)	4.490 (17.768)
2012	-0.130 (3.392)			-3.894 (3.226)		
2013	-9.787 (8.257)			-10.405 (7.839)		
2015		0.180 (2.666)			1.720 (2.616)	
2016		2.600 (4.713)			4.347 (4.977)	
2017		3.076 (6.100)			2.271 (5.775)	
2018		3.142 (9.135)			7.646 (9.267)	
Depvar Mean	36.239	39.846	38.412	16.733	20.103	18.763
Observations	3771	5716	9487	3771	5716	9487

SOURCE: National Child Abuse and Neglect Data System Jan 2011–Aug 2018.

NOTES: Unit of analysis is county-month-race rates of each child welfare outcome per 100,000 children. Underlying data are restricted to adolescents aged 12–17 with substantiated reports of maltreatment. If no substantiated reports occurred in a county-month cell for a particular race, that cell is dropped from the analysis. Estimates are ordinary least-squares coefficients, with clustered standard errors in parentheses. “Pre” and “Post” report estimates by race for 2011–2013 and post-2013 time periods, while “Group X Post” reports estimates for race-by-post-2013 dummy variables from analyses of all years. Covariates include unemployment rates by county-month, percent race by county, and county and calendar month fixed effects. Year fixed effects included in “Pre” and “Post” models, and a dummy for post-2013 time is included in pooled models reported in “Group X Post.” *p<0.05 **p<0.01 ***p<0.001

TABLE C5

Substantiation of adolescent maltreatment allegations by race

	Substantiation (basic model)	Substantiation (with control variables)
Asian	-0.004 (0.012)	-0.001 (0.008)
Black	0.012 (0.010)	0.014** (0.004)
Latino	0.020* (0.009)	0.023*** (0.005)
Native	0.040*** (0.008)	0.047*** (0.006)
Depvar mean	0.171	0.171
Observations	750325	750325

SOURCE: National Child Abuse and Neglect Data System Jan 2011–Aug 2018.

NOTES: Units of analysis are children (12–17) with reports of maltreatment. Estimates are ordinary least-squares coefficients predicting substantiation of a maltreatment report, with clustered standard errors in parentheses. The basic model includes only race dummy variables. The adjusted model includes unemployment rates by county-month, percent race by county-year, and county, calendar month, and year fixed effects. *p<0.05 **p<0.01 ***p<0.001

TABLE C6

Adolescent abuse and foster care entry for people of color relative to whites by county-month unemployment rates over a period including the previous recession (Jan 2006–Aug 2018)

	Neglect	Physical abuse	Emotional abuse	Sexual abuse	Substantiated maltreatment	Foster care entry
Asian	26.020*** (5.772)	7.325*** (1.799)	8.504*** (2.014)	3.969** (1.266)	33.528*** (7.430)	14.310*** (3.808)
Black	57.746*** (12.219)	14.773*** (2.886)	14.393*** (3.846)	5.841** (1.700)	71.497*** (14.487)	35.706*** (7.849)
Latino	-0.069 (2.805)	0.515 (0.511)	0.844 (0.595)	0.293 (0.287)	0.782 (3.338)	-0.099 (1.722)
Native	210.181*** (34.586)	50.248*** (9.732)	53.443*** (10.778)	26.483*** (6.217)	264.481*** (43.892)	132.416*** (27.408)
Unemployment	0.495 (0.594)	0.630* (0.306)	-0.162 (0.526)	0.363 (0.293)	0.647 (0.417)	-0.093 (0.524)
2006	-7.918* (3.078)	1.359 (1.729)	-5.043* (2.157)	-0.052 (1.525)	-6.142* (2.334)	-2.001 (3.001)
2007	-7.144* (2.980)	2.266 (1.208)	-3.047 (1.558)	0.106 (1.537)	-1.557 (3.178)	-2.125 (3.711)
2008	-1.591 (2.409)	1.876 (1.688)	-0.572 (1.840)	-0.708 (1.188)	1.080 (2.334)	-3.119 (2.056)
2009	-6.138* (2.675)	-1.758 (1.782)	-0.983 (1.930)	-0.812 (1.961)	-5.401* (2.624)	-2.979 (2.865)
2010	-3.195 (4.121)	-0.141 (1.919)	-0.377 (2.641)	-1.539 (1.901)	-3.391 (3.681)	-1.804 (4.075)
2011	-8.319* (3.472)	-2.215 (2.022)	-0.432 (1.969)	-2.632 (1.632)	-7.218** (2.574)	-2.847 (3.169)

2012	-1.288	-2.726	1.365	0.126	-1.743	-1.605
	(3.525)	(1.587)	(1.908)	(1.722)	(2.771)	(3.223)
2013	-1.125	0.816	3.087	-0.843	-2.100	-0.118
	(2.510)	(1.878)	(2.241)	(1.294)	(2.510)	(2.780)
2015	3.263	-0.367	1.045	-1.023	0.832	0.306
	(3.319)	(1.224)	(1.972)	(1.234)	(2.804)	(2.018)
2016	4.312	-1.035	0.984	2.091	3.952	2.491
	(3.427)	(1.516)	(3.509)	(1.274)	(2.205)	(2.842)
2017	4.639	3.362	0.996	2.798	5.056	0.583
	(3.384)	(3.156)	(2.377)	(2.051)	(2.783)	(3.491)
2018	6.551	0.345	1.197	0.625	6.468	5.329
	(4.768)	(1.688)	(3.282)	(1.687)	(4.324)	(4.011)
Depvar Mean	29.833	7.622	7.587	3.778	37.906	17.860
Observations	16040	16040	16040	16040	16040	16040

SOURCE: National Child Abuse and Neglect Data System Jan 2006–Aug 2018.

NOTES: Unit of analysis is county-month-race rates of each child welfare outcome per 100,000 children. Underlying data are restricted to adolescents aged 12–17 with substantiated reports of maltreatment. If no substantiated reports occurred in a county-month cell for a particular race, that cell is dropped from the analysis. Estimates are ordinary least-squares coefficients, with clustered standard errors in parentheses. Covariates are county and year fixed effects. * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Appendix D. Related Adult Findings

I model California adults' severe psychological distress, suicidal ideation, and low-income status in the CHIS using the same logistic regression approach as for the adolescent mental health analyses.

Study Sample

In this study, low-income is defined as having a family income of under 200 percent of the federal poverty level (FPL).¹ A caveat is that the CHIS is a well-regarded survey of health and health care in California, but it is not a leading resource for statistics on economic characteristics. Household participation in the survey requires an adult but not an adolescent respondent, which also leads to a substantially larger adult sample size. There are 105,887 adult study observations, with 31,657 before the Medi-Cal expansion and 64,340 after.

Findings

Table D1 presents summary statistics for adults, and Tables D2–D4 show regression findings. The odds of being low-income, defined as having a family income under 200 percent of FPL, are significantly higher for those of color compared to whites, for the foreign-born compared to US-born, and for LPRs and non-LPRs compared to US citizens. In the pre-expansion period, Asians had higher odds of being low-income compared to whites (OR=1.68, $p<0.001$), Blacks (OR=2.35, $p<0.001$) and Native Americans (OR=2.82, $p<0.001$) had over double the odds, and Latinos had nearly triple the odds (OR=2.91, $p<0.001$). After the Medi-Cal expansion, income disparities remained unchanged for most race groups, except for Latinos, who experienced a significant decline in their odds of being low-income. Still, they continued to have the highest odds relative to whites (OR=2.71, $p<0.001$).

Income disparities are also pronounced for immigrants. Before Medi-Cal expansion, noncitizens are much more likely to be low-income compared to citizens, though odds are much higher among non-LPRs (OR=4.99, $p<0.001$) than LPRs (OR=2.71, $p<0.001$). These disparities declined slightly among green card holders after the policy, but still remained more than double the rate of citizens (OR=2.18, $p<0.001$); non-LPRs did not have a significant change after the policy. Foreign-born adults prior to the expansion had more than double the odds of being low-income compared to US-born (OR=2.50, $p<0.001$), and there was no significant change after the policy change. Insurance coverage is not an increase in income, but it is protection against medical costs and negative financial repercussions like debt and bankruptcy. Changes like these may benefit household finances, but they are not accounted for in FPL calculations. Thus, despite Medi-Cal's documented positive effects on finances, rates of low income look similar after the policy's rollout, and income disparities by race or nativity are not significantly different in the two time periods.

The survey data reflect surprising mental health advantages for some otherwise disadvantaged groups. Asians and Latinos tend to have significantly lower odds of severe psychological distress and suicidal thoughts compared to whites, and Black and white Californians are similar. Native Americans are an important exception; they have higher odds of these measures of poor mental health compared to whites. Immigrants also tended to have better mental health. Foreign-born adults had lower odds of severe psychological distress and suicidal thoughts compared to US-born counterparts, and the same is true for noncitizens with or without green cards compared to citizens. This is notable since most non-LPR immigrants are undocumented individuals who lack access to full participation in society, and could be expected to have worse mental health.

¹ For a family of four in 2020, this would be a maximum income of \$52,400.

The adult mental health disparities do not change significantly in the period after Medi-Cal expansion. The odds ratios for the changes ranged between 0.6 and 1.4. Most suggested a decline in mental health odds for disadvantaged groups (Asian and Latino race groups were exceptions), but none of the estimates were significantly different from an odds ratio of one. The state’s large gains in insurance coverage may be improving a range of outcomes for adults, but financial and mental health disparities by race, nativity, and citizenship remain.

TABLE D1

Summary statistics for adults

	Pre-expansion	Post-expansion	All years
Age	39.95 (0.0177)	40.25 (0.0174)	40.14 (0.0133)
Female	0.502 (0.0000657)	0.502 (0.000117)	0.502 (0.0000770)
Married	0.499 (0.00336)	0.473 (0.00309)	0.482 (0.00219)
Education: no HS	0.155 (0.000912)	0.161 (0.00118)	0.159 (0.000842)
Education: high school	0.239 (0.000922)	0.222 (0.000974)	0.228 (0.000739)
Education: some college	0.256 (0.00330)	0.239 (0.00344)	0.245 (0.00258)
Rural county	0.0214 (0.000147)	0.0195 (0.000476)	0.0202 (0.000299)
Psych distress, past 30 days	0.0384 (0.00138)	0.0466 (0.00194)	0.0436 (0.00129)
Suicidal thoughts, past 12 mo.	0.0231 (0.00133)	0.0314 (0.00150)	0.0283 (0.00107)
Covered by Medi-Cal	0.134 (0.00269)	0.258 (0.00338)	0.212 (0.00232)
Uninsured for part of last 12 mo.	0.262 (0.00346)	0.183 (0.00300)	0.212 (0.00222)
Under 200% FPL	0.363 (0.00356)	0.361 (0.00433)	0.362 (0.00284)
N	41657	64230	105887

SOURCE: California Health Interview Survey 2011–2018. Mean, jackknife standard errors listed.

TABLE D2

Financial and mental health outcomes for adults of color relative to whites: odds ratios before and after Medi-Cal expansion

	Income under 200% FPL			Psych distress, past 30 days			Considered suicide, past 12 mo.		
	Pre	Post	Group X Post	Pre	Post	Group X Post	Pre	Post	Group X Post
Asian	1.678***	1.629***	0.945	0.669*	0.830	1.371	0.918	0.879	1.097
	(0.131)	(0.113)	(0.099)	(0.115)	(0.145)	(0.305)	(0.148)	(0.199)	(0.334)
Black	2.352***	1.970***	0.868	1.326	0.874	0.695	0.951	0.859	0.913
	(0.182)	(0.185)	(0.109)	(0.241)	(0.152)	(0.180)	(0.167)	(0.293)	(0.355)
Latino	2.905***	2.707***	0.871*	0.981	0.816	0.894	0.599***	0.539***	1.092
	(0.149)	(0.127)	(0.053)	(0.114)	(0.108)	(0.140)	(0.086)	(0.074)	(0.195)
Native American	2.282***	1.879***	0.832	2.055**	1.106	0.528	1.690	1.055	0.601
	(0.395)	(0.338)	(0.211)	(0.522)	(0.401)	(0.232)	(0.528)	(0.570)	(0.359)
2012	1.143***			0.966			1.208		
	(0.043)			(0.108)			(0.171)		
2013	1.024			1.085			1.159		
	(0.047)			(0.122)			(0.140)		
2015		0.939			1.247*			1.238	
		(0.062)			(0.133)			(0.205)	
2016		0.860*			1.063			1.237	
		(0.059)			(0.131)			(0.254)	
2017		0.784**			1.369			1.690***	
		(0.065)			(0.229)			(0.256)	
2018		0.752***			1.507**			2.250***	
		(0.047)			(0.185)				
Depvar Mean	0.363	0.361	0.362	0.038	0.047	0.044	0.023	0.031	0.028
Observations	41657	64230	105887	41657	64230	105887	41657	64230	105887

SOURCES: California Health Interview Survey 2011-2018.

NOTES: Odds ratios relative to white race reported, jackknife standard errors in parentheses. "Pre" and "Post" report estimates by race for 2011–2013 and post-2013 time periods, while "Group X Post" reports estimates for race-by-post-2013 dummy variables from analyses of all years. Covariates include age, sex, marital status, education level, and rural/urban status. Year fixed effects included in "Pre" and "Post" models, and a dummy for post-2013 time is included in pooled models reported in "Group X Post." *p<0.05 **p<0.01 ***p<0.001

TABLE D3

Adult financial and mental health outcomes for green card holders and nonholders relative to US citizens before and after ACA Medi-Cal expansion

	Income under 200% FPL			Psych distress, past 30 days			Considered suicide, past 12 mo.		
	Pre	Post	Group X Post	Pre	Post	Group X Post	Pre	Post	Group X Post
Has green card	2.714***	2.179***	0.767**	1.000	0.683	0.620*	0.701	0.444**	0.638
	(0.190)	(0.182)	(0.077)	(0.144)	(0.148)	(0.134)	(0.171)	(0.125)	(0.217)
No green card	4.985***	4.155***	0.784	0.792	0.493***	0.676	0.424**	0.232***	0.654
	(0.439)	(0.351)	(0.099)	(0.101)	(0.085)	(0.138)	(0.113)	(0.066)	(0.229)
2012	1.130**			0.971			1.214		
	(0.043)			(0.108)			(0.171)		
2013	1.023			1.098			1.165		
	(0.049)			(0.123)			(0.141)		
2015		0.945			1.244*			1.227	
		(0.064)			(0.131)			(0.201)	
2016		0.874			1.055			1.218	
		(0.063)			(0.130)			(0.250)	
2017		0.825*			1.352			1.637**	
		(0.061)			(0.214)			(0.248)	
2018		0.804**			1.474**			2.132***	
		(0.052)			(0.179)			(0.296)	
Depvar Mean	0.363	0.361	0.362	0.038	0.047	0.044	0.023	0.031	0.028
Observations	41657	64230	105887	41657	64230	105887	41657	64230	105887

SOURCE: California Health Interview Survey 2011–2018.

NOTES: Odds ratios relative to US citizens reported, jackknife standard errors in parentheses. “Pre” and “Post” report estimates by race for 2011–2013 and post-2013 time periods, while “Group X Post” reports estimates for race-by-post-2013 dummy variables from analyses of all years. Covariates include age, sex, marital status, education level, and rural/urban status. Year fixed effects included in “Pre” and “Post” models, and a dummy for post-2013 time is included in pooled models reported in “Group X Post.” *p<0.05 **p<0.01 ***p<0.001

TABLE D4

Adult financial and mental health outcomes for foreign-born relative to US-born individuals before and after the Medi-Cal expansion

	Income under 200% FPL			Severe psych distress (30 days)			Considered suicide (12 mo.)		
	Pre	Post	Group X Post	Pre	Post	Group X Post	Pre	Post	Group X Post
Foreign-born	2.503***	2.280***	0.882	0.974	0.633***	0.595***	0.693*	0.420***	0.604*
	(0.128)	(0.104)	(0.057)	(0.089)	(0.067)	(0.065)	(0.098)	(0.088)	(0.140)
2012	1.134**			0.968			1.212		
	(0.043)			(0.108)			(0.172)		
2013	1.042			1.091			1.155		
	(0.048)			(0.122)			(0.140)		
2015		0.951			1.234			1.222	
		(0.063)			(0.132)			(0.202)	
2016		0.886			1.046			1.209	
		(0.060)			(0.129)			(0.252)	
2017		0.824**			1.345			1.639**	
		(0.060)			(0.217)			(0.250)	
2018		0.807**			1.464**			2.121***	
		(0.051)			(0.178)			(0.300)	
Depvar Mean	0.363	0.361	0.362	0.038	0.047	0.044	0.023	0.031	0.028
Observations	41657	64230	105887	41657	64230	105887	41657	64230	105887

SOURCE: California Health Interview Survey 2011–2018.

NOTES: Odds ratios relative to US-born adults reported, jackknife standard errors in parentheses. "Pre" and "Post" report estimates by race for 2011–2013 and post-2013 time periods, while "Group X Post" reports estimates for race-by-post-2013 dummy variables from analyses of all years. Covariates include age, sex, marital status, education level, and rural/urban status. Year fixed effects included in "Pre" and "Post" models, and a dummy for post-2013 time is included in pooled models reported in "Group X Post." *p<0.05 **p<0.01 ***p<0.001



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