

Appendix A. Socio-demographic Characteristics of Survey Respondents Compared to Current Population Survey (2013) Data

	Un-weighted (survey)	Weighted (survey)	National Comparison (CPS)
Female (%)	50.7	52.6	51.9
Age (%)			
Ages 18-24	7.9	9.8	12.7
Ages 25-34	14.6	19.1	17.5
Ages 35-44	14.0	16.6	16.8
Ages 45-54	19.3	17.6	18.4
Ages 55-64	22.3	19.0	16.3
Age 65 +	21.9	17.8	18.3
Race (%)			
White only	72.3	67.9	66.0
Black only	9.6	11.4	11.6
Other	18.1	20.7	22.5
Hispanic ethnicity (%)			
Hispanic	10.7	14.3	15.0
Non-Hispanic	89.3	85.7	85.0
Education (%)			
Less than high school degree	10.6	12.2	12.6
High school degree	29.8	29.7	29.6
Some college	29.5	29.3	28.9
Bachelor's degree or higher	30.1	28.8	28.9
Household income (%)			
Under \$10,000	4.9	6.0	5.2
\$10,000-24,999	12.3	12.8	13.3
\$25,000-49,999	24.1	22.4	22.7
\$50,000-74,999	18.1	18.5	18.4
\$75,000 or higher	40.6	40.3	40.5
Employment status (%)			
Employed	57.1	59.0	59.9
Unemployed	8.2	9.7	4.9
Retired	20.1	15.6	17.2
Other (e.g., disabled, homemaker, other)	14.6	15.7	18.1
Region (%)			
Northeast	18.1	17.5	18.2
Midwest	23.6	21.6	21.4
South	35.3	38.0	37.1
West	23.0	22.9	23.4

Appendix B. Survey Questions

Assessment of Affected Social Groups

People who are addicted to prescription pain medication are more likely to be:

1. Poor
2. Middle class
3. Wealthy
4. This problem affects people of all income groups equally

People who are addicted to prescription pain medication are more likely to live in:

1. Rural areas
2. Urban areas
3. Suburban areas
4. This problem affects people living in all areas equally

People who are addicted to prescription pain medication are more likely to be:

1. White/Caucasian
2. Black/African American
3. Latino/Hispanic
4. This problem affects all racial and ethnic groups equally

[The order of response options 1-3 were randomized for each question. Response option 4 was last for all questions.]

Social Stigma

Would you be willing to have a person with an addiction to prescription pain medication start working closely with you on a job?
[Rate from definitely unwilling (1) to definitely willing (7)]

Would you be willing to have a person with an addiction to prescription pain medication marry into your family?
[Rate from definitely unwilling (1) to definitely willing (7)]

People addicted to prescription pain medications are more dangerous than the general population.
[Rate from strongly disagree (1) to strongly agree (7)]

Employers should be allowed to deny employment to a person addicted to prescription pain medication.
[Rate from strongly disagree (1) to strongly agree (7)]

Landlords should be allowed to deny housing to a person addicted to prescription pain medication.
[Rate from strongly disagree (1) to strongly agree (7)]

Some people lack of the self-discipline to use prescription pain medication without becoming addicted.
[Rate from strongly disagree (1) to strongly agree (7)]

How much are the following groups to blame for the problem of prescription pain medication abuse in the United States?
Individuals who have become addicted to prescription pain medications (*only examined this item in the study*)
[Rate from not at all to blame (1) to completely to blame (7)]

Policy Attitudes

[Preceding text:] We would like to ask you some questions about your support for policies to address the problem of prescription pain medication abuse.

Do you favor or oppose?

Arresting and prosecuting people who obtain multiple prescriptions for pain medication at the same time from different doctors?
[Rate from strongly oppose (1) to strongly favor (7)]

Expanding Medicaid insurance benefits for low income families to require coverage for treatment of substance abuse problems, including addiction to prescription pain medications?
[Rate from strongly oppose (1) to strongly favor (7)]

Passing laws to protect people from criminal charges for drug crimes if they seek medical help for themselves or others experiencing a prescription pain medication overdose?
[Rate from strongly oppose (1) to strongly favor (7)]

Providing naloxone, a medication that can quickly help a person experiencing a life-threatening drug overdose, to friends and family members of people using prescription pain medication?
[Rate from strongly oppose (1) to strongly favor (7)]

Requiring individuals enrolled in Medicaid programs who are suspected of abusing prescription pain medication to use a single physician prescriber and single pharmacy?
[Rate from strongly oppose (1) to strongly favor (7)]

Increasing government spending to improve treatment of substance abuse problems, including addiction to prescription pain medications?
[Rate from strongly oppose (1) to strongly favor (7)]

Personal experience

Have you ever had a problem with prescription pain medication abuse?

1. Yes
2. No

Have you ever had a family member or close friend who has had a problem with abuse of prescription pain medication?

1. Yes
2. No

Appendix C. Text provided to survey respondents defining prescription pain medications and providing a list of examples

A growing number of Americans abuse prescription pain medications. When we refer to prescription pain medications, we are specifically talking about narcotic medications prescribed by a doctor to treat pain. We are not referring to "over-the-counter" pain relievers such as aspirin, Tylenol, or Advil that can be bought in drug stores or grocery stores without a doctor's prescription. To see a list of prescription pain medications, please click [here](#).

If respondent clicked the link, a pop-up window listed the following medications:

VICODIN®, LORTAB®, LORCET®/LORCET PLUS®, PERCOCET®, PERCODAN®, TYLOX®, OXYCONTIN®, HYDROCODONE, MORPHINE, KADIAN®, OXYCODONE, TRAMADOL, ULTRAM®, CODEINE, TYLENOL® WITH CODEINE, METHADONE, DILAUDID®, FIORICET®, FIORINAL®, OPANA®, OXYMORPHONE, BUPRENORPHINE, SUBOXONE, SUBUTEX, DARVOCET-N®, DARVON®, PROPOXYPHENE, DEMEROL®

Appendix D. Association between Measures of Stigma and Perceptions about the Socio-Demographic Groups Affected by Prescription Opioid Use Disorder among a Representative Sample of US Adults

	Composite stigma measure		Individuals with prescription opioid use disorder are to blame for the problem		Some people lack the self-discipline to use prescription opioids without becoming addicted		Unwilling to have a person with prescription opioid use disorder marry into family		Unwilling to work closely with person with prescription opioid use disorder		People with prescription opioid use disorder are more dangerous than the general population		Employers should be allowed to deny employment to a person with prescription opioid use disorder		Landlords should be allowed to deny housing to a person with prescription opioid use disorder	
	OLS Coeff	95% CI	OLS Coeff	95% CI	OLS Coeff	95% CI	OLS Coeff	95% CI	OLS Coeff	95% CI	OLS Coeff	95% CI	OLS Coeff	95% CI	OLS Coeff	95% CI
Income class (reference: problem affects all income groups equally)																
More likely to be poor (group 1)	.15	-.14 to .44	.33	-.04 to .70	.10	-.42 to .62	-.35	-.88 to .18	-.19	-.75 to .37	.54 * a	.08 – 1.00	.16	-.32 to .65	.45 a	-.20 to 1.10
More likely to be middle class (group 2)	-.11	-.33 to .11	.16 b	-.12 to .44	.08	-.18 to .34	-.20	-.56 to .16	-.35	-.71 to .01	-.19	-.55 to .17	.03	-.36 to .41	-.32	-.71 to .08
More likely to be wealthy (group 3)	-.14	-.55 to .27	-.57 c	-.120 to .07	-.19	-.83 to .45	-.17	-.82 to .48	-.14	-.62 to .34	-.27 c	-.93 to .39	.10	-.50 to .71	.27	-.34 to .88
Race/ethnicity (reference: problem affects all racial and ethnic groups equally)																
More likely to be White/Caucasian (group 1)	-.11	-.31 to .08	-.14	-.40 to .13	-.12	-.37 to .13	-.01	-.30 to .28	-.19	-.50 to .12	-.30	-.62 to .02	.08	-.27 to .42	-.11	-.47 to .24
More likely to be Black/African American (group 2)	-.12	-.53 to .30	-.48	-.1.19 to .23	-.72 *	-.1.40 to -.03	-.45	-.1.23 to .31	-.02	-.59 to .55	.54	-.27 to 1.34	.20	-.40 to .80	.11	-.65 to .88
More likely to be Latino/Hispanic (group 3)	-.38	-.1.40 to .64	-.02	-.1.36 to 1.32	.13	-.1.20 to 1.47	-.1.30	-.3.49 to .89	-.91	-.3.06 to 1.24	.88	-.47 to 2.24	-1.06	-.2.91 to .79	-.38	-.2.33 to 1.57
Area of residence (reference: problem affects all areas groups equally)																
More likely to live in rural area (group 1)	-.20	-.71 to .32	-.18	-.85 to .50	-.27	-.1.08 to .53	-.66	-.1.65 to .32	-.42	-.1.43 to .58	.21	-.94 to 1.37	.02	-.98 to 1.02	-.07	-.1.00 to .84
More likely to live in urban area (group 2)	.03	-.25 to .31	.03	-.35 to .42	.18	-.11 to .48	-.04	-.43 to .36	-.24	-.65 to .17	.06	-.38 to .50	.21	-.25 to .66	.03	-.50 to .55
More likely to live in suburban area (group 3)	.06	-.19 to .31	.12	-.18 to .43	.08	-.24 to .41	-.16	-.58 to .25	-.30	-.70 to .10	.21	-.17 to .59	.35	-.02 to .73	.10	-.34 to .54

Estimates incorporate survey weights to account for the survey's sampling design and non-response.

Asterisk (*) indicate coefficient significant at p-value<.05. Asterisks (**) indicate coefficient significant at p-value<.01.

^a indicates significant difference (p-value<0.05) in coefficients of groups 1 and 2 of that category (see column 1 for group information). Significant differences in coefficients determined through post-model estimation Wald tests.

^b indicates significant difference (p-value<0.05) in coefficients of groups 2 and 3.

^c indicates significant difference (p-value<0.05) in coefficients of groups 1 and 3.

Appendix E. Association between Measures of Social Stigma toward Individuals with Prescription Opioid Use Disorder and Policy Support among a Representative Sample of US Adults

	<i>Punitive</i>				<i>Public health-oriented</i>							
	Arrest and prosecute people who obtain multiple prescriptions from different doctors		Require individuals on Medicaid suspected of problematic use to use a single prescriber and pharmacy		Expand Medicaid insurance benefits to cover substance use treatment, including prescription OUD treatment		Pass laws to protect people from criminal charges for drug crimes if they seek medical help for an overdose		Provide naloxone to friends and family members of people using prescription opioids		Increase government spending to improve treatment of substance use problems	
	Coeff	95% Conf. Interval	Coeff	95% Conf. Interval	Coeff	95% Conf. Interval	Coeff	95% Conf. Interval	Coeff	95% Conf. Interval	Coeff	95% Conf. Interval
Individuals with prescription opioid use disorder are to blame for the problem	.20**	.07 - .33	.23**	.10 - .36	-.10	-.22 to .01	-.00	-.12 to .12	.04	-.08 to .16	-.17**	-.29 to -.05
Some people lack the self-discipline to use prescription opioids without becoming addicted	.13*	.01 - .25	.17**	.05 - .28	.12*	.01 - .23	.08	-.03 to .19	.17**	.05 - .29	.12**	.01 - .23
Unwilling to have a person with prescription opioid use disorder marry into family	.04	-.11 to .19	.09	-.05 to .23	-.08	-.20 to .05	-.05	-.18 to .08	-.12	-.25 to .02	-.11	-.24 to .01
Unwilling to work closely with person with prescription opioid use disorder	.07	-.07 to .21	.06	-.08 to .19	.03	-.09 to .15	-.02	-.14 to .11	.03	-.09 to .16	.02	-.11 to .14
People with prescription opioid use disorder are more dangerous than the general population	.21**	.08 - .34	.09	-.04 to .22	.04	-.08 to .17	.03	-.08 to .14	.12*	.01 - .24	.17**	.05 - .30
Employers should be allowed to deny employment to a person with prescription opioid use disorder	.16*	.01 - .31	.26**	.11 - .41	.06	-.07 to .20	-.01	-.14 to .12	-.07	-.20 to .06	-.05	-.18 to .07
Landlords should be allowed to deny housing to a person with prescription opioid use disorder	.00	-.12 to .12	-.10	-.22 to .02	-.19**	-.31 to -.08	-.11	-.23 to .00	-.09	-.21 to .02	-.14*	-.25 to -.03
Political party affiliation (reference group: Democrat)												
Independent	-.23	-.56 to .10	-.17	-.51 to .16	-.65**	-.97 to -.33	-.28	-.60 to .04	-.38*	-.71 to -.06	-.72**	-1.03 to -.40

Republican	-.26	-.66 to .14	-.40*	-.80 to -.00	-.73**	-1.11 to -.36	-.34	-.71 to .03	-.47*	-.84 to -.09	-.95**	-1.35 to -.56
Personal experience with prescription OUD ^a	.20	-.10 to .51	.16	-.16 to .48	.17	-.14 to .47	-.09	-.40 to .21	.42**	.13 - .72	-.01	-.31 to .29
Age	.00	-.01 to .01	.02**	.01 - .03	.00	-.01 to .01	.00	-.01 to .01	-.00	-.01 to .01	.00	-.00 to .01
Female	.03	-.24 to .30	.18	-.10 to .46	.37**	.11 - .63	-.01	-.28 to .25	-.02	-.29 to .24	.25	-.01 to .51
Educational attainment (reference group: high school degree)												
<High school	-.13	-.62 to .36	-.24	-.75 to .28	-.32	-.81 to .17	-.05	-.53 to .43	-.01	-.53 to .50	-.19	-.65 to .26
Some college	-.21	-.56 to .15	-.08	-.46 to .29	-.01	-.35 to .34	.01	-.34 to .36	-.32	-.66 to .03	-.01	-.36 to .34
Bachelor's or greater	-.35	-.72 to .02	-.02	-.39 to .35	.45*	.08 - .82	.45*	.07 - .83	-.30	-.67 to .07	-.02	-.40 to .37
Race (reference group: non-Hispanic White)												
Non-Hispanic Black	-.11	-.57 to .34	-.56*	-1.01 to -.11	-.24	-.69 to .22	-.03	-.48 to .43	-.15	-.60 to .31	.07	-.38 to .51
Other	.38	-.20 to .96	-.11	-.86 to .63	-.21	-.85 to .44	-.19	-.89 to .52	.27	-.34 to .87	-.21	-.81 to .39
Hispanic (ref: not Hispanic)	-.17	-.92 to .58	-.06	-.89 to .77	.36	-.39 to 1.11	.41	-.37 to 1.18	-.29	-.98 to .41	.417	-.26 to 1.09
Income category (reference group: \$75,000 or greater)												
<\$10,000	-.44	-1.16 to .29	-.29	-.85 to .27	.61	-.14 to 1.37	-.29	-.99 to .41	.36	-.27 to .98	-.037	-.61 to .55
\$10,000-24,999	-.14	-.63 to .35	-.24	-.70 to .21	.35	-.07 to .76	.01	-.47 to .49	.35	-.12 to .82	.07	-.39 to .53
\$25,000-49,999	-.12	-.48 to .23	.10	-.28 to .47	.26	-.12 to .64	.06	-.31 to .44	.25	-.12 to .62	.20	-.17 to .56
\$50,000-74,999	.14	-.23 to .51	.29	-.13 to .71	-.02	-.36 to .32	-.05	-.39 to .30	.09	-.27 to .45	-.09	-.43 to .25
Lives in MSA	-.12	-.46 to .22	.05	-.34 to .44	.25	-.09 to .58	.05	-.34 to .45	.34	-.05 to .72	.31	-.08 to .69
Observations	1060		1063		1056		1059		1059		1059	

Asterisks(*) indicate p-value<0.05(*) or p-value<0.01(**). The ordered logit regression coefficients indicate change in support for policy (on log proportion odds scale) with each one unit change in the measure of stigma (which are 7-point Likert scales treated as continuous in these ordered logit models). Models incorporate survey weights to account for the survey's sampling design and non-response.