

Social Stigma Toward Persons With Prescription Opioid Use Disorder: Associations With Public Support for Punitive and Public Health–Oriented Policies

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Objective: Prescription opioid use disorder and overdose have emerged as significant public health challenges in the past 15 years. Little is known about public attitudes toward individuals who have developed a prescription opioid use disorder and whether these attitudes affect support for policy interventions. This study examined social stigma toward individuals with prescription opioid use disorder and tested whether stigma was associated with support for various policy interventions.

Methods: A nationally representative Web-based survey was conducted from January 31 to February 28, 2014. The 1,071 respondents reported on their beliefs about and attitudes toward persons affected by prescription opioid use disorder and rated their support for various policy interventions. Ordered logistic regression models estimated the association between stigma and public support for punitive and public health–oriented policies.

Results: Most respondents viewed this disorder as affecting all groups—racial and ethnic, income, and geographic area of residence groups—fairly equally, despite epidemiological data demonstrating that certain populations have been disproportionately burdened. Respondents expressed high levels of stigma toward individuals with prescription opioid use disorder. Levels of stigma were generally similar among those with and without experience with prescription opioid use disorder, either one's own or that of a relative or close friend. Higher levels of stigma were associated with greater support for punitive policies and lower support for public health–oriented policies.

Conclusions: Reframing the issue to emphasize the structural factors contributing to prescription opioid use disorder and the barriers to accessing evidence-based treatment might improve support for policies that benefit affected individuals.

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Over the past 15 years, rates of admission to substance use treatment programs and overdose mortality associated with prescription opioids have escalated dramatically as sales and consumption of these medications have increased (1,2). The rising rate of heroin use in recent years has been attributed in part to the prescription opioid epidemic (1,3,4). Yet, amid this public health crisis, minimal research has explored how the public views individuals with prescription opioid use disorder (OUD) and whether attitudes toward this population affect the types of policy interventions the public supports for addressing the problem (5–7).

Stigma is an important health determinant that may inhibit advancement of evidence-based policy (8–10). The process of stigmatization involves labeling the difference that defines the stigmatized group, stereotyping and connecting that labeled difference with other negative attributes, distinguishing the people who are stigmatized from mainstream society and assigning them reduced social status, and discrimination against this group (11). Stigma toward individuals with substance use disorders is persistently

high, exceeding stigma toward those with mental illnesses or physical disabilities across cultural contexts (8,12). However, stigma toward individuals with prescription OUD may also differ from stigma toward those with substance use disorders more broadly.

Past drug epidemics (for example, heroin in the 1960s and 1970s and crack cocaine in the 1980s and 1990s) often were characterized as affecting predominantly low-income, minority populations living in urban settings, factors that influenced public attitudes and policy responses (13–16). U.S. drug policies historically have targeted groups already facing marginalization because of their race, ethnicity, or social class (13,16). Linking substance use with populations that already experience discrimination contributes to the “othering” aspect of stigmatization (11,13,16). Some have suggested that responses to the current epidemic may be less punitive than responses to prior drug epidemics because the majority of those affected are white (17,18). However, no study has empirically assessed the degree to which public views about the affected population reflect the epidemiological data.

In addition to beliefs about the social groups affected by prescription OUD, another factor potentially relevant to stigma is the ambiguous legal status of opioid medications. They are available, legally, with a prescription, but they also can be purchased on the black market. Connecting individuals with substance use disorders to other negative characteristics, such as engagement in criminal activity through possession of illicit substances, may heighten stigma (11). However, the legal status of prescription opioids may disrupt perceived linkages between prescription OUD and criminality, potentially reducing stigma.

The public also may be less likely to connect prescription OUD with criminal activity because some individuals have developed this disorder after receiving medically supervised treatment with opioids (1). Attribution theory posits that when a health condition appears to be under an individual's control, the reaction is to condemn or neglect rather than to help the person (19). Generally, the public views substance use disorders as under greater individual control than other health conditions (12,20). However, if rising rates of prescription OUD have resulted in part from system-level factors (for example, pharmaceutical marketing, prescribing practices, and inadequate pain treatments), attributions of blame to the individual may be less prevalent.

Finally, exposure to persons with prescription OUD may influence levels of stigma by complicating stereotypes. Research examining the effects of contact on stigma toward individuals with substance use disorders has yielded mixed results (8,21). The nature of the relationship with the affected person may moderate the association between contact and stigma (22). For instance, parents may express lower levels of stigma toward their children with substance use disorders than they do toward work colleagues with such disorders.

The level of stigma toward individuals with prescription OUD is unknown, but, as outlined above, it may differ from broader stigma toward individuals with substance use disorders for several reasons. To explore these issues, we conducted a national public opinion survey to describe beliefs about the sociodemographic characteristics of those affected by prescription OUD, measure stigma toward this population, examine whether levels of stigma differ among those with and without personal experience with prescription OUD, and estimate stigma's association with support for various policy interventions.

METHODS

Data

We conducted a survey about the prescription opioid epidemic among a nationally representative Web-based panel from January 31 to February 28, 2014. The sample was drawn from an online panel that recruits participants by using an address-based sampling frame that encompasses 97% of U.S. households (23). Households lacking Internet or computer access were provided a Web-enabled device.

Other academic researchers have used this panel to conduct nationally representative public opinion research on diverse public health topics (24–27). The recruitment rate for the overall GfK KnowledgePanel in 2014 was 16.6%. The completion rate for this survey (proportion of sampled panelists who completed the survey) was 75%. We excluded respondents with a survey duration time exceeding two standard deviations above the mean duration of 13 minutes ($N=65$) or a duration time of five minutes or less ($N=27$) and those with missing data on one or more items measuring stigma ($N=40$). The final analytic sample included 1,071 respondents. Survey weights were applied in all analyses to account for the sampling design and nonresponse; weights were derived by using demographic distributions in the 2013 Current Population Survey. A comparison with current population survey data demonstrated that the sociodemographic characteristics of the study sample reflected the distribution of characteristics in the broader U.S. population. [A table presenting these data is included in an online supplement to this article.]

We asked respondents questions in several domains, including beliefs about social groups affected by prescription OUD, stigma, and support for various policy interventions. To prevent previous questions from influencing responses to later questions, we randomized the order of categories of questions and the order of questions within each category. All survey questions used the terms “prescription pain medication” (rather than prescription opioids) and “abuse” and “addiction” (rather than prescription OUD) to reflect the terminology typically used in news media coverage of this issue (28) and to facilitate comprehension among the general public. Respondents read a definition of prescription opioids at the beginning of the survey and viewed a list of examples. [These survey materials are available in the online supplement.] The Johns Hopkins Bloomberg School of Public Health Institutional Review Board approved this study as exempt.

Measures

The survey company provided data on the sociodemographic characteristics of respondents, including their age, gender, race-ethnicity, educational attainment, household income, geographic residence, and political partisanship. To assess personal experience, we asked respondents whether they themselves or a family member or close friend had ever had a problem with prescription OUD. Given that nearly all the respondents who reported having this problem themselves also reported having a family member or close friend with this problem, we included both in our measurement of exposure.

We measured respondents' perceptions of whether certain social groups have been disproportionately burdened by prescription OUD. Specifically, we asked whether people with prescription OUD are more likely to be poor, middle class, or wealthy or whether prescription OUD affects people of all income groups equally; to be white/Caucasian, black/African American, or Latino/Hispanic or whether the

problem affects all groups equally; or to live in rural areas, urban areas, or suburban areas or whether the problem affects people living in all areas equally.

Using items adapted from prior stigma survey research, we assessed stigma toward individuals with prescription OUD by measuring desire for social distance, perceptions of dangerousness, acceptance of discrimination, and blame. Social distance items asked respondents about their willingness to work closely with or have a person with prescription OUD marry into their family (6,29–32). To assess perceived dangerousness, respondents indicated the extent to which they agreed that people with prescription OUD are more dangerous than the general population (33). To measure acceptance of discrimination, respondents rated their endorsement of whether employers should be allowed to deny employment and landlords should be allowed to deny housing to a person with prescription OUD (6,29–31). Respondents rated their agreement with statements that some people lack the self-discipline to use prescription opioids without becoming addicted and that individuals with prescription OUD are to blame for the problem.

We measured all stigma measures on 7-point Likert scales. For descriptive purposes, we dichotomized these measures so that responses 5–7 indicated endorsement of the belief and responses 1–4 indicated lack of endorsement. We also averaged together responses to the individual Likert scale items to construct a composite stigma scale, which had good internal consistency (Cronbach's $\alpha=.77$).

To assess support for various policy interventions, we considered six policies that target individuals with prescription OUD and that might be categorized as either punitive (that is, negatively affecting this group) or public health oriented (that is, helping this group through expanded services or treatment). Respondents rated their support for each policy on 7-point Likert scales. We included policies considered in reports by expert bodies, such as the Centers for Disease Control and Prevention (34–37). Punitive policies included arresting and prosecuting people who obtain multiple prescriptions for opioid medications from different doctors and requiring Medicaid enrollees suspected of problematic opioid use to use a single prescriber and pharmacy (that is, a “lock-in” program). Although the “lock-in” program has less severe consequences than arrest, it may create barriers to health care access. Neither of these policies attempts to help individuals with a potential prescription OUD. Public health-oriented policies included expanding Medicaid insurance benefits to cover prescription OUD treatment; passing laws to protect people from criminal charges when seeking medical help for an overdose; providing naloxone, a medication to reverse opioid overdose, to friends and family members of people using prescription opioids; and increasing government spending to improve substance use treatment.

Analytic Approach

To examine whether the public views prescription OUD as predominantly affecting particular social groups and

to characterize levels of social stigma, we calculated descriptive statistics (proportions and 95% confidence intervals [CIs]). We tested whether perceptions of prescription OUD as being prevalent among particular social groups are associated with stigma by estimating separate linear regression models in which the individual stigma measures and the composite stigma scale were the outcomes. In addition, we used chi-square tests to assess differences in the proportions of respondents endorsing individual measures of stigma among those with and without personal experience.

To assess the association between stigma and support for various policy interventions, we estimated separate ordered logistic regression models for each measure of policy support. The primary independent variable was the continuous stigma scale. We also estimated models with the individual stigma measures (excluding the scale) as the primary independent variables. To account for potential confounders, we adjusted for respondent age, gender, race and ethnicity, educational attainment, household income, residence in a metropolitan statistical area (MSA), political partisanship, and personal experience with prescription OUD. To determine the extent to which stigma, compared with political partisanship and sociodemographic characteristics, explained variation in policy support, we estimated incremental linear regression models and compared the R^2 values across these models. The R^2 values indicated the amount of variation in policy support explained by the independent variables. The first model included respondents' sociodemographic characteristics and personal experience, the second model added political party affiliation, and the final model added the stigma scale. We used Stata 12 to conduct all analyses (38).

RESULTS

Table 1 summarizes sociodemographic and other characteristics of the study sample. Approximately a third of our sample reported having personal experience with prescription OUD either themselves or through a family member or close friend. Table 2 presents the proportions of respondents expressing stigmatizing attitudes toward individuals with prescription OUD and differences among respondents with and without personal experience. Large majorities felt that individuals with prescription OUD are to blame for the problem (78%) and that some lack the self-discipline to use prescription opioids without becoming addicted (72%). Majorities also expressed desire for social distance and felt that employers should be allowed to deny employment to persons with prescription OUD. Attitudes were mostly similar among respondents with and without personal experience. In the two cases that differed, respondents with personal experience expressed more negative attitudes.

Table 3 presents data on perceptions of the prevalence of prescription OUD among particular social groups. Majorities of respondents felt that prescription OUD affects all groups equally—income, racial and ethnic, and geographic area of residence. Among the minority who viewed prescription

OD as predominantly affecting particular social groups, the largest proportions pointed to people who are middle class (15%), are white (18%), and live in suburban areas (10%). Regression models estimating the relationship between beliefs about these characteristics of the target population and the composite stigma scale found no significant relationships [see online supplement]. When estimating the relationships between perceptions of the target population and the individual stigma measures, we found that the perception that prescription OUD predominately affects persons who have low incomes versus those who are wealthy was associated with a greater likelihood of believing persons with prescription OUD are dangerous and to blame for the problem [see online supplement].

Table 4 presents results from the ordered logistic regression models testing the association between stigma and support for various policy interventions, adjusting for potential confounders. Higher stigma ratings were associated with greater support for arresting people who obtain multiple prescriptions from different doctors (coefficient=.78) and requiring Medicaid enrollees suspected of nonmedical use to use a single prescriber and pharmacy (coefficient=.71). In contrast, higher stigma ratings were associated with lower support for several public health-oriented policies, including expanding Medicaid insurance benefits to cover prescription OUD treatment (coefficient=−.17), passing laws to protect people from criminal charges if they seek help for an overdose (coefficient=−.15), and increasing government spending to improve substance use treatment (coefficient=−.20).

We found similar patterns in sensitivity analyses, with significant associations between several of the individual stigma measures and support for punitive policies; the relationships between individual measures of stigma and support for the public health-oriented policies were more mixed [see online supplement]. Compared with Democrats, Independents and Republicans were less likely to support several of the public health-oriented policies. Having personal experience with prescription OUD was associated with greater support for providing naloxone to friends and family members of people using prescription opioids.

Comparison of the R^2 values (Table 5) suggests that the stigma scale substantially improved the models' ability to explain variation in support for punitive policies. However, adding stigma to the models estimating support for the public health-oriented policies increased the R^2 values much less substantially than the addition of political party affiliation.

DISCUSSION

In this nationally representative public opinion survey, respondents expressed high levels of stigma toward individuals with prescription OUD. Findings indicate that stigma may have important implications for support for certain policies to address the opioid epidemic. Higher levels of stigma were independently associated with greater public support for punitive policies and lower support for several public health-oriented policies.

TABLE 1. Sociodemographic characteristics of 1,071 survey respondents^a

Characteristic	%	95% CI
Age		
18–29	19.6	16.4–22.8
30–44	26.0	22.7–29.2
45–59	27.7	24.6–30.8
≥60	26.7	23.7–29.6
Female	52.6	49.0–56.2
Educational attainment		
Less than high school	12.2	9.8–14.6
High school diploma	29.7	26.4–32.9
Some college	29.3	26.0–32.6
Bachelor's degree or higher	28.8	25.6–32.1
Race		
White, non-Hispanic	67.9	64.3–71.5
Black, non-Hispanic	11.4	9.1–13.8
Other	20.7	17.4–24.0
Hispanic	14.3	11.5–17.2
Income		
<\$10,000	6.0	4.2–7.8
\$10,000–\$24,999	12.8	10.4–15.1
\$25,000–\$49,999	22.4	19.5–25.4
\$50,000–\$74,999	18.5	15.7–21.4
≥\$75,000	40.3	36.8–43.8
Lives in metropolitan statistical area	83.7	81.1–86.3
Political partisanship		
Democrat	35.5	32.0–39.0
Independent	40.2	36.7–43.7
Republican	24.3	21.2–27.3
Personal experience with prescription opioid use disorder ^b	30.2	26.9–33.6

^a All models accounted for sampling design and nonresponse by incorporating survey weights, enabling generalization to the broader U.S. population.

^b Respondents who reported having had a problem with prescription opioids themselves or a family member or close friend with a problem. Most respondents who reported their own problem also reported having a family member or close friend with the problem.

Respondents generally did not characterize the prescription opioid epidemic along racial-ethnic, class-based, or geographic lines, despite data suggesting that affected individuals are more likely to be white, have lower incomes, and live in nonurban communities (2,39). One explanation may be insufficient public knowledge of these trends. Another factor may be lack of coverage of sociodemographic patterns of use by the news media (28). Regardless, the apparent lack of perceptions based on racial-ethnic group, class, or geographic residence is notable because it is inconsistent with research on attitudes regarding past drug epidemics (13,16).

Although stigma toward individuals with prescription OUD was prevalent, the magnitude may be lower than the level of stigma toward individuals with other substance use disorders (30,31). In a 2013 national survey that used the same measures to assess stigma, 90% of respondents (versus 68% in our study) reported being unwilling to have a person with a substance use disorder marry into their family and 78% (versus 58% in our study) were unwilling to work closely with a person with a substance use disorder (31). Similarly, in

TABLE 2. Social stigma toward individuals with prescription opioid use disorder (OUD) in a representative sample of U.S. adults with and without personal experience of prescription OUD (N=1,071)^a

Measure ^b	All respondents (N=1,071)		Respondents without personal experience (N=755)		Respondents with personal experience (N=316)	
	%	95% CI	%	95% CI	%	95% CI
Individuals with prescription OUD are to blame for the problem	78.1	75.1–81.1	77.0	73.4–80.6	80.5	75.3–85.8
Some people lack the self-discipline to use prescription opioids without becoming addicted	71.8	68.6–75.0	68.6	64.6–72.5	79.2**	73.9–84.4
Unwilling to have a person with prescription OUD marry into the family	67.5	64.2–70.9	68.0	64.0–71.9	66.6	60.3–72.9
Unwilling to work closely with a person with prescription OUD	57.7	54.1–61.2	57.0	52.8–61.2	59.3	52.8–65.7
People with prescription OUD are more dangerous than the general population	56.2	52.6–59.8	54.2	49.9–58.4	60.9	54.5–67.3
Employers should be allowed to deny employment to a person with prescription OUD	55.3	51.8–58.9	52.8	48.5–57.1	61.2*	54.8–67.5
Landlords should be allowed to deny housing to a person with prescription OUD	38.9	35.4–42.4	37.3	33.2–41.5	42.5	35.9–49.0

^a All models accounted for sampling design and nonresponse by incorporating survey weights, enabling generalization to the broader U.S. population.

^b Survey questions specifically asked about individuals with addiction to prescription pain medication to facilitate comprehension and reflect the terminology commonly employed by the news media in coverage of this topic.

* $p < .05$, ** $p < .01$

the 1996 General Social Survey, 90% of respondents expressed unwillingness to interact with a person with cocaine dependence (29). It is possible that the legality of prescription opioids may be one factor that reduces stigma toward this group, but we were unable to test this potential explanation. As with other stigmatized conditions, most respondents endorsed the individual-blame attributions (12,19).

TABLE 3. Perceptions about the sociodemographic groups affected by prescription opioid use disorder in a representative sample of U.S. adults (N=1,071)^a

Group	%	95% CI
Income class		
More likely to be poor	4.7	3.3–6.2
More likely to be middle class	15.0	12.3–17.7
More likely to be wealthy	3.8	2.3–5.4
Problem affects all income groups equally	76.5	73.3–79.7
Race-ethnicity		
More likely to be black/African American	2.1	1.1–3.1
More likely to be Latino/Hispanic	.7	0–1.3
More likely to be white/Caucasian	17.7	14.8–20.6
Problem affects all racial and ethnic groups equally	79.5	76.5–82.6
Area of residence		
More likely to live in rural area	1.9	.9–3.0
More likely to live in urban area	8.4	6.3–10.4
More likely to live in suburban area	10.2	7.8–12.5
Problem affects all areas equally	79.6	76.5–82.6

^a All models accounted for sampling design and nonresponse by incorporating survey weights, enabling generalization to the broader U.S. population.

In contrast to research on stigma and contact with individuals with mental illness (22,40,41), we found little evidence that personal experience with prescription OUD reduces stigma. Rather, respondents with personal experience expressed higher levels of stigma on some measures. Having a prescription OUD may strain interpersonal relationships, potentially heightening stigma among friends and family. Future research should examine the nature and quality of personal relationships with respect to stigma.

Stigma was a significant factor explaining variation in support for punitive policies and explained even more variation than did political partisanship. This raises the possibility that reducing stigma toward individuals with prescription OUD might be one way to discourage adoption of punitive policies. However, this interpretation has important caveats given that punitive policies themselves can contribute to stigmatizing attitudes toward target populations (7). Although punitive drug policies may be an outcome of stigma, such policies also may intensify negative attitudes by defining the affected population as criminal (7). This potential policy feedback loop complicates interpretation of a possible causal relationship between stigma and support for various policy interventions. In addition, although greater stigma was associated with lower support for public health-oriented policies, the analysis of the proportion of variation explained by stigma versus political partisanship raises questions about whether reducing stigma would be sufficient to change support for public health-oriented policies, a concern raised in other recent literature (6).

TABLE 4. Association between social stigma toward individuals with prescription opioid use disorder (OUD) and policy support among a representative sample of U.S. adults (N=1,071)^a

Variable	Punitive			Public health oriented						Increase government spending to improve treatment of substance use problems (N=1,059)		
	Arrest and prosecute people who obtain multiple prescriptions from different doctors (N=1,060)		Require Medicaid enrollees suspected of problematic use to use a single prescriber and pharmacy (N=1,063)	Expand Medicaid benefits to cover substance use treatment, including treatment for prescription OUD (N=1,056)		Pass laws to protect people from criminal charges for drug crimes if they seek medical help for an overdose (N=1,059)		Provide naloxone to friends and family members of people using prescription opioids (N=1,059)				
	Coeff.	95% CI	Coeff.	95% CI	Coeff.	95% CI	Coeff.	95% CI	Coeff.		95% CI	
Stigma scale	.78**	.61 to .94	.71**	.54 to .88	-.17*	-.33 to -.01	-.15*	-.30 to -.01	-.03	-.18 to .13	-.20**	-.35 to -.05
Political party (reference: Democrat)												
Independent	-.27	-.61 to .06	-.22	-.56 to .11	-.66**	-.98 to -.34	-.29	-.60 to .01	-.42**	-.74 to -.10	-.73**	-.104 to -.42
Republican	-.29	-.68 to .09	-.42*	-.81 to -.02	-.76**	-.113 to -.39	-.36	-.73 to .02	-.53**	-.91 to -.15	-.104**	-.144 to -.065
Personal experience with prescription OUD	.24	-.06 to .54	.23	-.09 to .55	.27	-.03 to .57	-.03	-.33 to .26	.52**	.23 to .80	.07	-.23 to .36
Age	.00	-.00 to .01	.02**	.01 to .03	.00	-.01 to .01	.00	-.01 to .01	.00	-.01 to .01	.00	-.00 to .01
Female (reference: male)	.05	-.22 to .32	.20	-.08 to .48	.35**	.09 to .61	.00	-.27 to .26	-.01	-.28 to .26	.23	-.03 to .50
Educational attainment (reference: high school diploma)												
Less than high school	-.10	-.58 to .39	-.17	-.67 to .32	-.27	-.76 to .21	.00	-.47 to .47	.07	-.44 to .59	-.13	-.58 to .31
Some college	-.15	-.51 to .21	.01	-.35 to .38	.05	-.30 to .40	.05	-.29 to .40	-.26	-.61 to .09	.00	-.35 to .36
Bachelor's degree or higher	-.36	-.73 to .01	.00	-.38 to .38	.43*	.05 to .81	.43*	.06 to .80	-.33	-.70 to .04	-.06	-.44 to .33
Race (reference: non-Hispanic white)												
Non-Hispanic black	-.11	-.57 to .35	-.52*	-.98 to -.06	-.25	-.71 to .20	-.03	-.48 to .42	-.14	-.60 to .31	.01	-.44 to .45
Other	.39	-.17 to .96	-.06	-.76 to .65	-.19	-.82 to .44	-.16	-.87 to .56	.29	-.32 to .91	-.19	-.82 to .44
Hispanic (reference: not Hispanic)	-.11	-.85 to .64	-.04	-.85 to .76	.36	-.40 to 1.12	.41	-.36 to 1.19	-.30	-.102 to .43	.41	-.30 to 1.13
Income (reference: ≥\$75,000)												
<\$10,000	-.40	-.115 to .34	-.3	-.83 to .23	.64	-.11 to 1.39	-.25	-.95 to .44	.41	-.26 to 1.08	.07	-.54 to .68
\$10,000–\$24,999	-.11	-.61 to .38	-.25	-.72 to .21	.40	-.02 to .82	.04	-.41 to .50	.41	-.05 to .88	.17	-.29 to .63
\$25,000–\$49,999	-.12	-.47 to .23	.09	-.28 to .46	.29	-.10 to .67	.07	-.29 to .44	.29	-.07 to .65	.23	-.14 to .60
\$50,000–\$74,999	.16	-.20 to .53	.28	-.15 to .70	.03	-.31 to .38	.01	-.33 to .34	.19	-.16 to .54	.01	-.33 to .35
Lives in a metropolitan statistical area (reference: does not)	-.13	-.47 to .21	.06	-.32 to .45	.25	-.07 to .58	.07	-.32 to .46	.34	-.03 to .71	.33	-.05 to .71

^a All models accounted for sampling design and nonresponse by incorporating survey weights, enabling generalization to the broader U.S. population. The Ns vary across models because of minor differences in missingness in the outcome variable. The ordered logit regression coefficients indicate change in support for policy (on the log proportional odds scale) with each 1-unit change in the stigma scale.

*p<.05. **p<.01

TABLE 5. Proportion of variance in policy support explained by sociodemographic characteristics, political party affiliation, and stigma in a representative sample of U.S. adults (N=1,071)^a

Policy	Model 1: sociodemographic characteristics ^b		Model 2: model 1 and political party affiliation ^c		Model 3: model 2 and stigma measure ^d		Magnitude of change in R ²	
	R ²	p	R ²	p	R ²	p	Model 1 to 2	Model 2 to 3
Arrest and prosecute people who obtain multiple prescriptions from different doctors	3.74	.007	3.76	.956	17.05	<.001	+.02	+13.2
Require Medicaid enrollees suspected of problematic use to use a single prescriber and pharmacy	6.18	<.001	6.35	.543	17.53	<.001	+.16	+11.18
Expand Medicaid insurance benefits to cover substance use treatment	4.55	.001	7.84	<.001	8.73	.017	+3.29	+.90
Pass laws to protect people from criminal charges for drug crimes if they seek medical help for an overdose	2.16	.211	2.96	.054	3.78	.020	+.80	+.83
Provide naloxone to friends and family members of people using prescription opioids	4.25	.001	5.81	<.003	5.81	.667	+1.57	+.03
Increase government spending to improve treatment of substance use problems	3.95	.006	9.01	<.001	10.33	.004	+5.06	+1.33

^a All models accounted for sampling design and nonresponse by incorporating survey weights, enabling generalization to the broader U.S. population. The p values indicate the joint significance of each block of variables in the model or the new variable(s) added to the model (using postestimation Wald tests).

^b Model 1 included age, gender, race and ethnicity, educational attainment, household income, residence in a metropolitan statistical area, and personal experience with prescription opioid use disorder.

^c Model 2 included political party affiliation in addition to the variables in model 1.

^d Model 3 included stigma in addition to the variables in models 1 and 2.

This study was subject to some limitations. Low recruitment rates for online survey panels raise concern about external validity; however, the sociodemographic characteristics of the sample were comparable to those of the general population. Additional survey research should assess the stability of public attitudes about this issue. Second, this survey assessed only social stigma toward individuals with prescription OUD. Although social stigma arguably has significant implications for policy, our understanding of stigma toward this population could be enhanced by assessing the extent to which individuals with prescription OUD experience self-stigma (8) and the effects of self-stigma on well-being (42). Third, our survey questions employed terminology related to “abuse” and “addiction” in regard to “pain medication,” although the current clinical diagnosis is “opioid use disorder.” It is possible that use of these terms heightened respondents’ levels of stigma (43). However, we intentionally selected terms most likely to be familiar to the public on the basis of a content analysis of news media coverage of the issue (28). Finally, this was a cross-sectional survey, and thus we were unable to assess causality with respect to stigma and support for various policies.

CONCLUSIONS

This is the first study of which we are aware that assessed social stigma toward individuals with prescription OUD. Findings indicate that negative attitudes toward this population were prevalent in this national sample of U.S. adults.

Experimental studies have demonstrated that reframing problems can alter the degree to which the public attributes responsibility to individuals (versus governmental actors) for stigmatized conditions (44,45). Message-framing research suggests that portraying substance use disorders as treatable may reduce stigma, but it is not clear that this translates into increased support for public health-oriented policies (6).

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