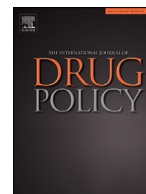




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Research paper

Political partisanship and stigma against people who use drugs in opinions about allocating COVID-19 prevention resources to vulnerable populations



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ARTICLE INFO

Keywords:

People who use drugs
Stigma
COVID-19

ABSTRACT

Background: The distribution of resources during the COVID-19 pandemic has been politicized and contentious in the United States. Vulnerable populations, such as those living in poverty, experiencing homelessness, or who use drugs, are particularly susceptible to becoming infected with COVID-19 and often have limited access to protective supplies, such as masks and hand sanitizer. Our aim was to understand public opinion on increasing the allocation of COVID-19 prevention resources to vulnerable populations.

Methods: Data were from an online survey of 680 United States adults. Participants' opinions on the allocation of COVID-19 prevention resources to people with low income, experiencing homelessness, or who use drugs were assessed using a five-item Likert scale. We examined the prevalence of these opinions and their relationship to sociodemographic characteristics, COVID-19 beliefs, and drug-related experiences.

Results: Most participants supported increasing resources for individuals with low incomes (79.6%) and experiencing homelessness (74.6%), while a minority supported increasing resources for people who use drugs (33.5%). Politically conservative participants were less likely to support increasing resources for all three populations than those who were politically liberal. Skepticism about the severity of COVID-19 was also associated with less support for increasing resources across groups.

Discussion: Our results demonstrate that people who use drugs continue to be stigmatized in the context of the COVID-19 pandemic, resulting in popular opinion not supporting people who use drugs with potentially lifesaving resources. Overcoming this stigma is essential to prevent COVID-19 among people who use drugs, a population which experiences elevated risk of COVID-19 infection.

Introduction

By May 2021, the novel coronavirus 2019 (SARS-CoV-2 or COVID-19) has infected more than thirty-two million Americans and resulted in more than 576,000 deaths (Johns Hopkins University, 2021). As with other infectious disease epidemics, social determinants of health such as poverty, homelessness, and race/ethnicity have impacted disease morbidity and mortality during COVID-19 (Abrams & Szeffler, 2020; Tsai & Wilson, 2020; Burström & Tao, 2020; Rollston & Galea, 2020; Singu et al., 2020). Social and economic factors impact both health behaviors, such as drug use, as well as access to resources (Galea & Vlahov, 2002). People who use drugs (PWUD) face elevated COVID-19 risk due to the circumstances of drug use, such as close proximity to others

when purchasing and using drugs, as well as from the high co-occurrence of other structural vulnerabilities like homelessness (European Monitoring Center for Drugs and Drug Addiction, 2020; Grebely et al., 2020). People experiencing homelessness face increased risk of COVID-19 infection and serious health outcomes from COVID-19 as they are often housed in crowded spaces and lack access to protective equipment, testing, and quality health care (Abrams & Szeffler, 2020; Chang et al., 2020; Tsai & Wilson, 2020). Further, PWUD and those experiencing homelessness often have a variety of physical health comorbidities that put them at high risk for both becoming infected with COVID-19 and having severe outcomes, including respiratory illnesses (Bahorik et al., 2017; Martens, 2001).

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As public health officials work to contain and manage the COVID-19 pandemic, it is clear that those struggling with adverse social determinants require support and innovative measures to mitigate the spread of the virus through their populations. Shelters for the homeless, income support for the low income, and access to testing for marginalized populations could reduce morbidity and mortality for these populations (Abrams & Szeffler, 2020). However, as the pandemic continues to exact its toll on the economy, cuts to public health and drug treatment services have occurred, the availability of meal services (i.e., soup kitchens), homeless shelters, and other services for those without stable housing have been reduced as a direct result of the pandemic. Many programs were forced to close early in the pandemic due to challenges operating services safely, including difficulty ensuring physical distancing, lack of personal protective equipment, and difficulty effectively screening clients (Perri et al., 2020). While some have since reopened, often in a limited capacity, and some new initiatives to address hunger and homelessness have been introduced, these services have not been able to match the increased demand resulting from the economic impacts of the pandemic. More than one-third (38.3%) of Americans are estimated to be experiencing food insecurity during the COVID-19 pandemic (Fitzpatrick et al., 2020), and this food insecurity is exacerbated among individuals who are social vulnerable or in poor health (Fitzpatrick et al., 2021). For drug treatment services, there are a variety of pandemic related challenges that have reduced service provision, including staff and patient illness and a need to shift treatment frameworks to deemphasize in-person interaction (Dunlop et al., 2020).

Understanding public opinion on urgent political issues in the US context is essential as public opinion is known to have a meaningful impact on public policy (Burstein, 2003). Importantly, the salience of an issue is a key determinant of the impact of public opinion on policy (Burstein, 2003), and there are few issues currently as salient in American politics as COVID-19 relief and resource allocation. New public policies are needed to reduce the vulnerability of marginalized populations to becoming infected with COVID-19 such as, public health policies that increase the provision of protective supplies, provide safe housing, food, and keep harm reduction facilities and needle exchange programs open (Abrams & Szeffler, 2020; Chang, et al., 2020; Tsai & Wilson, 2020). These services also must include adequate social distancing provisions and sanitary conditions, which require additional public funding. The goal of the current study is to understand factors affecting public opinion of resource allocation to vulnerable populations during the COVID-19 pandemic in the United States.

Public opinions of resource allocation to some vulnerable populations but not others may reflect stigma. This pandemic can promote stigma towards groups who are at high risk for infection. People who experience homelessness or PWUD are at risk of COVID-19 infection due to existing structural vulnerabilities (i.e., housing and food insecurity, poverty) and through the effects of lockdowns, closing of public spaces and harm reduction facilities, and the restriction of outside movements (Tsai & Wilson, 2020). This increased risk of infection with COVID-19 may result in increased stigma as people who are homeless and those who use drugs may be blamed for spreading the virus and may be perceived as being less worthy or deserving of assistance (Dannatt et al., 2021). Research has documented public concerns on twitter regarding transmission of COVID-19 among individuals experiencing homelessness (Doogan et al., 2020). Further, politicians have criticized local leaders for deeming patients in residential substance use treatment facilities a priority group for vaccination (Betz, 2020). The potential for a newly emerging stigma would compound the long existing negative perceptions of PWUD, including beliefs that PWUD are more blame worthy for their illness than those with mental illnesses or physical disabilities (Corrigan et al., 2009). PWUD are often also perceived negatively, as dangerous and untrustworthy, and people are unwilling to marry or work closely with someone with a substance use disorder and are more willing to accept discriminatory practices against PWUD (Barry et al., 2014; Corrigan, et al., 2009). Even healthcare providers commonly ex-

hibit stigma against PWUD, with many reporting dissatisfaction with caring for such patients, which results in suboptimal care (Van Boekel et al., 2013). Providers even view patients with substance use disorders more negatively than those with mental illnesses, another highly stigmatized group in healthcare settings (Rey, et al., 2019).

Political affiliation may also impact public opinion of resource allocation to vulnerable populations during the COVID-19 pandemic. Funding for vulnerable groups will inevitably be influenced by the faltering economy, yet evidence suggests that the politicizing of the pandemic could also affect allocation of resources (Abbas, 2020). Politicizing pandemics is not new. Despite evidence that politicization of a public health threat shapes public attitudes that negatively affect vulnerable populations such as immigrants, the homeless, and PWUD (Abbas, 2020; Adida et al., 2018), there have been insufficient attempts during the COVID-19 pandemic to work towards a bi-partisan public health narrative in the United States. This politicization could risk the allocation of resources being influenced by political messaging rather than public health guidance and population needs. It also risks damaging efforts to decrease societal stigma toward those seeking drug dependence treatment.

In order to understand public opinions on resource allocation to vulnerable populations during the COVID-19 crisis, we used data from an online crowdsourced survey to assess these opinions and their associations with sociodemographic characteristics, political beliefs, COVID-19 attitudes and behaviors, and drug-related beliefs.

Methods

Data source

We conducted an online survey of United States adults from March 24th to 27th, 2020 and then conducted a follow-up survey from May 5th to May 14th, 2020 via Amazon Mechanical Turk (MTurk). Data used in the present analysis are from the follow-up survey. For context of this survey in the overall timing of the COVID-19 pandemic, the World Health Organization declared a global pandemic on March 11th (World Health Organization, 2020), and the White House provided social distancing guidelines on March 16th (White House, 2020). Timing for individual state shut down orders varied, but 15 states had issued such orders by March 24th, 6 more were issued by March 26th, and 22 additional states went into shut down by April 7th. By the beginning of May, some states were beginning to reopen and/or lift restrictions on certain business types.

MTurk has been previously used for participant recruitment and allows researchers to collect data quickly regarding the dynamics of large groups (Berinsky et al., 2011; Paolacci & Chandler, 2014). While MTurk samples are not typically nationally representative, they are generally more representative than convenience sampling and the resulting data has been shown to be reliable (Berinsky, et al., 2011; Follmer et al., 2017; Huff & Tingley, 2015). Our study followed MTurk's recommended best practices (Chandler & Shapiro, 2016; Strickland & Stoops, 2019; Young & Young, 2019).

Participants were required to be at least 18 years or older, live in the United States, able to speak and read English and to have heard of the coronavirus (COVID-19). Attention and validity checks were embedded throughout the survey to ensure responses were reliable (Rouse, 2015). In total, 683 individuals completed both survey waves and passed attention checks. Participants completed each survey in approximately 15 minutes, they were compensated \$2.50 for completing the baseline survey and \$3.00 for the follow-up. We removed the three transgender individuals from the analytic sample due to the sample being so small and gender being a correlate of interest, yielding a final analytic sample size of 680. This study was approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

Measures

Resource allocation opinions for vulnerable populations

We asked participants three questions about whether COVID-19 prevention resources should be increased for three vulnerable populations: low income individuals, individuals experiencing homelessness, and individuals who use drugs. Participants read the following statements and were then asked to rate their agreement (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree): “People who use drugs should be given more resources (food, face masks, hand sanitizer) to help with the coronavirus pandemic,” “People who are homeless should be given more resources (food, face masks, hand sanitizer) to help with the coronavirus pandemic,” and “Low-income people should be given more resources (food, face masks, hand sanitizer) to help with the coronavirus pandemic.” We created binary indicators indicating agreement (strongly agree/agree) that each population (low income, homeless, drug using) should receive more resources.

Sociodemographic characteristics

Participants reported their age (in years), gender (male, female), race (categorized as non-Hispanic White, non-Hispanic Black, and other), education (dichotomized as less than college and some college or more), and the size of the town/city they lived in (dichotomized as >100,000 population vs <100,000). We also asked if anyone in the participant’s household received government assistance, including food stamps and other monetary benefits (yes/no). Ten participants were unsure whether anyone in their household received benefits, so their responses were recoded as missing. We assessed housing stability by asking participants what their current living situation was. We considered participants who reported living in a house, apartment, or room that they rent or own as stably housed and participants who reported staying with someone else, living on the street, staying in multiple places, living in a recovery/transitional house, or somewhere else to be unstably housed. Finally, we asked participants to place themselves on a 7-point scale of political alignment (very liberal to moderate to very conservative). We then combined very liberal, liberal, and slightly liberal responses into a single “liberal” category and did the same for the conservative side of the scale. This yielded a variable with three categories: liberal, moderate, and conservative.

COVID-19 Beliefs and Behaviors

We created a COVID-19 Skepticism score based on the response to three items where participants indicated how much they agreed with each statement on a 5-item scale (1=strongly disagree, 2=disagree, 3=neither, 4=agree, 5=strongly agree). The included items were “The coronavirus isn’t any worse than the flu,” “The health risks from the coronavirus have been exaggerated,” and “The coronavirus is a hoax.” We then averaged the responses to these items to create a score (range: 1-5), where higher scores indicate more skepticism. We also asked participants how much they agreed/disagreed with the statement “Poor communities will be hit harder than rich communities by the coronavirus.” We combined strongly agree and agree responses and strongly disagree and disagree responses to yield three response categories (strongly agree/agree, neither agree nor disagree, disagree/strongly disagree). Participants also reported how frequently they wore a mask when outside (always, sometimes, never).

Drug use beliefs and experiences

We included two measures in this category. Participants indicated if they knew anyone who had an opioid addiction (yes/no), as a proxy measure for personal experiences with PWUD. We also asked participants if they had personally used opioids for non-medical reasons, but only 7 individuals indicated that they had so we did not further include personal drug use in the analysis. Finally, we asked participants if they agreed with the statement “People who use drugs can stop drug use if they have the will power” and created the same three

Table 1

Opinions on increasing resources provided to individuals with low incomes, who are experiencing homelessness, and who use drugs among an online sample of United States adults (n=680).

	Low Income	Homeless	Use Drugs
Strongly Agree	220 (32.4%)	205 (30.2%)	62 (9.1%)
Agree	321 (47.2%)	302 (44.4%)	166 (24.4%)
Neither	80 (11.8%)	109 (16.0%)	225 (33.1%)
Disagree	32 (4.7%)	32 (4.7%)	139 (20.4%)
Strongly Disagree	27 (4.0%)	32 (4.7%)	88 (12.9%)

response categories (strongly agree/agree, neither agree nor disagree, disagree/strongly disagree) as for previous measures.

Analysis

We first calculated the prevalence of each resource allocation opinion. We used one sample tests for equality of proportions to test the differences in the prevalence of these opinions. We then used Chi Square and t-tests to assess associations between believing each group should receive more resources and each covariate. We then selected all covariates that were associated ($p < 0.1$) with believing any of the populations should receive more resources to include in multivariable logistic regression models. We estimated a multivariable logistic regression for resource allocation for each population using the same covariates. All analyses were conducted using Stata 14 (StataCorp, 2015).

Results

Our sample was comprised primarily of non-Hispanic White (77.2%), college educated (87.9%) individuals in their late 30s (mean=39.1, SD=11.5). The sample had a slight female majority (55.9%) and more than half lived in an urban setting (54.0%). Few households received government assistance (16.0%) and most participants were stably housed (89.0%). About half of participants identified as liberal (52.4%), one-fifth as moderate (20.2%), and one-quarter as conservative (27.4%). COVID-19 skepticism was generally low (mean=1.8, SD=0.9). Most (77.8%) believed that poor communities would be hit harder by COVID-19 than rich ones. Approximately one-third (39.3%) consistently wore a mask, and an additional 42.7% wore a mask some of the time. One-quarter knew someone with an opioid addiction (26.2%). Beliefs about whether people can stop using drugs if they have enough willpower were evenly distributed, with about one third endorsing each category.

Overall, most participants supported increasing resources for individuals with low income (79.6%) or those experiencing homelessness (74.6%; Table 1). In contrast, only one third (33.53%) supported increasing resources for individuals who used drugs. Tests for equality of prevalences indicated that support for increasing resources for both low income ($z=17.12$, $p < 0.001$) and homeless individuals ($z=15.18$, $p < 0.001$) was significantly higher than that for people who use drugs. The bivariate correlates of thinking low income individuals and individuals experiencing homelessness should receive more resources were very similar (Table 2). Older age, female gender, Black race, receiving government assistance, being unstably housed, identifying as politically liberal, having low COVID-19 skepticism, believing that poor communities will be hit harder than rich ones, always wearing a mask, knowing someone with an opioid addiction, and disagreeing that people can stop using drugs with enough will power were all associated with an increased likelihood of supporting additional resources for both low income and homeless populations. There were fewer significant correlates of supporting increased resources for people who use drugs. Black race, living in an urban area, political liberalism, lower COVID-19 skepticism, consistently wearing a mask outside, and disagreeing that people can stop using drugs with enough will power were associated with more support for providing additional resources to people who use drugs.

Table 2

Sample characteristics and correlates of believing COVID-19 resources should be increased for three vulnerable populations among an online sample of United States adults (n=680).

	Overall	Low Income			Homeless			Use Drugs		
	%	Yes	No	p	Yes	No	p	Yes	No	p
Sociodemographic Characteristics										
Age, M (SD)	39.1 (11.5)	39.5 (11.6)	37.2 (11.1)	0.036	39.8 (11.6)	36.9 (11.0)	0.005	39.9 (11.6)	38.7 (11.5)	0.191
Gender										
Female	55.9	82.6	17.4	0.025	79.5	20.5	0.001	34.7	65.3	0.453
Male	44.1	75.7	24.3		68.3	31.7		32.0	68.0	
Race										
Non-Hispanic White	77.2	78.3	21.7	0.064	73.7	26.3	0.062	31.6	68.4	0.065
Non-Hispanic Black	7.5	92.2	7.8		882	11.8		47.1	52.9	
Other	15.3	79.8	20.2		72.1	27.9		36.5	63.5	
Some College Education or More										
Yes	87.9	79.3	20.7	0.607	74.9	25.1	0.563	34.0	66.0	0.534
No	12.1	81.7	18.3		72.0	28.0		30.5	69.5	
Live in an Urban Area (>100,000 people)										
Yes	54.0	81.7	18.3	0.126	73.8	26.2	0.642	38.4	61.6	0.003
No	46.0	77.0	23.0		75.4	24.6		27.8	72.2	
Household Received Gov. Assistance										
Yes	16.0	87.9	12.2	0.024	81.3	18.7	0.097	30.8	69.2	0.469
No	84.0	78.3	21.7		73.7	26.3		34.5	65.5	
Unstably Housed										
Yes	11.0	89.3	10.7	0.026	86.7	13.3	0.011	26.7	73.3	0.182
No	89.0	78.4	21.7		73.1	26.9		34.4	65.6	
Political Alignment										
Liberal	52.4	90.1	9.9	<0.001	84.5	15.5	<0.001	41.8	58.2	<0.001
Moderate	20.2	77.2	22.8		70.6	29.4		30.9	69.2	
Conservative	27.4	60.5	39.5		58.4	41.6		19.5	80.5	
COVID-19 Beliefs/Behaviors										
COVID-19 Skepticism Score (SD)	1.8 (0.9)	1.6 (0.8)	2.5 (1.1)	<0.001	1.6 (0.7)	2.4 (1.1)	<0.001	1.5 (0.7)	1.9 (1.0)	<0.001
Believe that poor communities will be hit harder than rich ones										
Strongly Agree/Agree	77.8	86.4	13.6	<0.001	80.7	19.3	<0.001	38.3	61.7	0.001
Neither	12.1	69.5	30.5		64.5	35.5		24.1	75.9	
Strongly Disagree/Disagree	10.2	58.5	41.5		57.3	42.7		23.2	76.8	
Wears a mask when going outside										
Always	39.3	83.9	16.1	<0.001	80.2	19.9	<0.001	40.1	59.9	0.003
Sometimes	42.7	82.4	17.6		78.3	21.7		32.1	67.9	
Never	18.1	63.4	36.6		53.7	46.3		22.8	77.2	
Drug Related Beliefs/Experiences										
Know someone with opioid addiction										
Yes	26.2	87.6	12.4	0.002	84.8	15.2	<0.001	36.5	63.5	0.326
No	73.8	76.7	23.3		70.9	29.1		32.5	67.5	
People can stop using drugs if they have enough willpower										
Strongly Agree/Agree	37.2	70.8	29.3	<0.001	67.2	32.8	<0.001	27.7	72.3	<0.001
Neither	30.0	78.4	21.6		72.6	27.5		26.0	74.0	
Strongly Disagree/Disagree	32.8	90.6	9.4		84.8	15.3		47.1	52.9	

In the multivariable logistic regression models (Table 3), older age was associated with increased odds for beliefs that low income (adjusted Odds Ratio[aOR]=1.04, 95% Confidence Interval:1.01, 1.06) and homeless (aOR=1.03, 95% CI:1.01, 1.06) populations should receive more resources but was not significantly associated with beliefs about more resources for people who use drugs. Female gender was associated with believing homeless populations should receive more resources (aOR=1.68, 95% CI: 1.11, 2.53). Black participants were more likely than White participants to endorse increasing resources for low income (aOR=4.40, 95% CI: 1.11, 17.48) and drug using (aOR=2.20, 95% CI: 1.13, 4.29) populations. Living in an urban setting was also associated with supporting resources for low income (aOR=1.86, 95% CI: 1.15, 3.00) and drug using (aOR=1.59, 95% CI: 1.10, 2.29) populations. Individuals who were unstably housed were more likely to support increased resources for people experiencing homelessness than those who were stably housed (aOR=3.52, 95% CI: 1.44, 8.63). Individuals who identified as politically conservative were less likely to support increasing resources for any of the populations than politically liberal individuals were. Liberals and moderates did not differ in the likelihood of supporting increased resources for each group. Higher COVID-19 skepticism scores were associated with decreased support for additional resources across populations (low income aOR=0.55, 95% CI: 0.42, 0.71; homeless aOR=0.50, 95% CI: 0.39, 0.65; drug using aOR=0.75, 95% CI: 0.58, 0.97). Those who had neither agreed nor disagreed (aOR=0.36, 95% CI: 0.19, 0.65) or who disagreed (aOR=0.27, 95% CI: 0.14, 0.51) that poor communities would be hit harder than rich ones by COVID-19 were less likely to endorse providing resources to low income individuals. This variable was not associated with support for resources for individuals experiencing homelessness. Neither agreeing nor disagreeing that poor communities will be hit harder was associated with less support for resources for people who use drugs compared to believing that poor communities will be hit harder, but there were no statistical differences between those who agreed and disagreed. Knowing someone with an opioid addiction was associated with increased support for resources for low income (aOR=2.16, 95% CI: 1.19, 3.90) and homeless (aOR=2.20, 95% CI: 1.20, 3.72) populations, but not for people who use drugs (aOR=1.15, 95% CI: 0.77, 1.70). Disagreeing that someone can stop using drugs with enough willpower was associated with supporting resources for people who use drugs (aOR=1.66, 95% CI: 1.07, 2.57) compared to agreeing with that statement.

Table 3

Logistic regression results for believing COVID-19 resources should be increased for three vulnerable populations among an online sample of United States adults (n=680).

	Low Income			Homeless			Drug Using		
	aOR	95% CI	p	aOR	95% CI	p	aOR	95% CI	p
Sociodemographic Characteristics									
Age	1.04	1.01, 1.06	0.001	1.03	1.01, 1.06	0.001	1.01	1.00, 1.03	0.084
Female Gender	1.56	0.98, 2.48	0.06	1.68	1.11, 2.53	0.014	1.04	0.72, 1.48	0.844
Race									
Non-Hispanic White	REF	–	–	REF	–	–	REF	–	–
Non-Hispanic Black	4.40	1.11, 17.48	0.035	2.88	1.00, 8.35	0.051	2.20	1.13, 4.29	0.020
Other	1.12	0.58, 2.17	0.734	0.94	0.53, 1.67	0.834	1.15	0.70, 1.89	0.590
Some College Education or More	0.64	0.31, 1.33	0.233	1.03	0.54, 1.99	0.924	0.67	0.37, 1.21	0.180
Live in an Urban Area (>100,000 pop.)	1.86	1.15, 3.00	0.011	1.00	0.66, 1.53	0.993	1.59	1.10, 2.29	0.013
Household Received Gov. Assistance	1.68	0.84, 3.38	0.142	1.25	0.69, 2.26	0.459	0.77	0.48, 1.26	0.303
Unstably Housed	2.74	0.99, 7.58	0.052	3.52	1.44, 8.63	0.006	0.59	0.32, 1.08	0.086
Political Alignment									
Liberal	REF	–	–	REF	–	–	REF	–	–
Moderate	0.67	0.36, 1.25	0.204	0.72	0.42, 1.25	0.245	0.82	0.51, 1.31	0.402
Conservative	0.29	0.17, 0.51	<0.001	0.43	0.26, 0.72	0.001	0.45	0.27, 0.72	0.001
COVID-19 Beliefs/Behaviors									
COVID-19 Skepticism Score (SD)	0.55	0.42, 0.71	<0.001	0.50	0.39, 0.65	<0.001	0.75	0.58, 0.97	0.03
Believe that poor communities will be hit harder than rich ones									
Strongly Agree/Agree	REF	–	–	REF	–	–	REF	–	–
Neither	0.36	0.19, 0.65	0.001	0.68	0.38, 1.23	0.201	0.43	0.23, 0.83	0.011
Strongly Disagree/Disagree	0.27	0.14, 0.51	<0.001	0.82	0.43, 1.57	0.547	0.61	0.31, 1.16	0.132
Wears a mask when going outside									
Always	REF	–	–	REF	–	–	REF	–	–
Sometimes	1.06	0.62, 1.82	0.827	1.07	0.66, 1.71	0.789	0.80	0.55, 1.17	0.256
Never	0.77	0.40, 1.48	0.430	0.56	0.31, 1.02	0.057	0.81	0.46, 1.42	0.463
Drug Related Beliefs/Experiences									
Know someone with opioid addiction	2.16	1.19, 3.90	0.011	2.20	1.20, 3.72	0.003	1.15	0.77, 1.70	0.493
People can stop using drugs if they have enough willpower									
Strongly Agree/Agree	REF	–	–	REF	–	–	REF	–	–
Neither	0.88	0.51, 1.51	0.638	0.70	0.42, 1.15	0.155	0.75	0.47, 1.20	0.232
Strongly Disagree/Disagree	1.71	0.91, 3.23	0.096	1.04	0.61, 1.79	0.887	1.66	1.07, 2.57	0.024

Discussion

In this analysis, we sought to understand opinions towards increasing COVID-19 prevention resources for three vulnerable populations among adults in the United States. Our results highlighted a clear disparity between opinions towards providing resources to low income or homeless individuals and individuals who use drugs. Participants were much less likely to support providing additional resources to people who use drugs than they were for low income or homeless people. As people who use drugs are often also people who have little income or experience homelessness, this finding suggests a clear stigma that drug use is a characteristic unworthy of preventative resources during the COVID-19 pandemic. COVID-19 skepticism was unsurprisingly associated with decreased support for additional resources across groups. Such skepticism is particularly relevant in the US context, where a Gallup poll in April 2020 estimated that one-third of Americans did not believe that COVID-19 was deadlier than the flu (Ritter, 2020). Skepticism in the United States has been largely driven by political and cultural leaders actively downplaying the seriousness of the pandemic and spreading false information (Parmet & Paul, 2020). Political partisanship and COVID-19 risk perceptions have been further linked to policy preferences (de Bruin et al., 2020).

While stigma pervades policy decisions that affect PWUD, it is particularly concerning now as the COVID-19 pandemic intersects with the overdose crisis, amplifying risks for this population. For example, drug overdoses have increased by 18% during the coronavirus pandemic, particularly affecting Black and Latinx communities (Alter & Yeager, 2020; University of Baltimore, 2020; Volkow, 2020). Stigma toward PWUD has been well documented in the literature, and PWUD often avoid seeking help because of fear of the stigma that they will experience from medical professionals and general public (Centers for Disease Control and Prevention, 2020; Volkow, 2020). Some have suggested that stigma to-

wards PWUD has lessened in recent years due to more sympathetic media depictions of drug use during the opioid epidemic (McGinty et al., 2019; Substance Abuse and Mental Health Services Administration & Office of the Surgeon General, 2018). However, while this suggestion holds for those diagnosed with mental illness, evidence suggests that the transgressions of social norms (e.g., lying, stealing) make it hard for even family and friends to be empathetic toward people who use drugs (Volkow, 2020). Data also suggests that there is continued public resistance to the information that demonstrates that in order to reduce or quit drug use people need treatment, employment and social support rather than being criminalized or discriminated against (Corrigan & Niewegowski, 2018; Volkow, 2020). Our results support these conclusions. This interpretation is further supported by the finding that the attitude that people can stop using drugs if they have sufficient will power was associated with less support for resources for people who use drugs.

While we did anticipate less support for resources for people who use drugs, the degree of disparity between the groups was striking. Individuals experiencing homelessness and those living in poverty are often highly stigmatized due to beliefs that they are responsible for their own situations or are in these situations due to a lack of effort to improve their circumstances (De Las Nueces, 2016). Further, there is a significant overlap between these populations, as PWUD experience extremely high rates of homelessness across settings (Nilsson et al., 2019; Song et al., 2000; Sutter et al., 2019; Topp et al., 2013). Given this overlap, we would have expected that the gap between support for resources for these populations would have been narrower. The sequelae of drug use that increase COVID-19 risk are, in fact, the consequences of poverty and unstable and low-quality housing, which make social distancing and hand hygiene behaviors challenging. The importance of overcoming the societal stigma towards people who use drugs is even more critical due to the intersecting health crisis of the COVID-19 pandemic and the opioid epidemic.

It is important to note that PWUD are not a monolithic population and that risk levels for COVID-19 likely vary by socioeconomic stability and nature of one's drug use. PWUD can range from structurally and economically stable individuals who casually use substances to the most marginalized and vulnerable individuals often considered as "typical" PWUD. Stigmatizing attitudes are often more common towards individuals who use "socially unacceptable" drugs like heroin compared to who use more "accepted" substances like marijuana or even prescription pain relievers (Brown, 2015; Goodyear & Chavanne, 2020). Levels of stigma were high in our sample, with only one-third of our sample disagreeing that people can stop using drugs if they have enough willpower. This belief was significantly associated with willingness to distribute resources to people who use drugs. Together, this evidence supports our interpretation that stigma is the key driver of these differences, though other interpretations are possible. It may be the case that participants in our sample did not perceive PWUD to need additional COVID prevention resources. Further research is needed to understand if participants accurately understood that PWUD experience high rates of structural vulnerabilities putting them at increased risk for COVID-19 infection.

The stigmatized attitudes towards resource allocation identified in this study may have important influences on COVID-19 relief policy in the United States. Policy decisions driven by stigma-based public opinions could be extremely harmful for public health during this pandemic. For example, stigma has contributed to the removal of homeless individuals from temporary accommodations in upper class neighborhoods during the pandemic, due to fears of drug selling and public safety (Stewart, 2020). It is essential that public health policy reject these stigmatized beliefs and instead emphasize health equity. It is important to note that the impact of COVID-19 on PWUD has been largely absent from the national discourse when deciding how to distribute resources. Whether due to stigma or a perceived lack of need, this has translated to an amplification of the ongoing overdose crisis, as many existing services were disrupted, at least temporarily, and few additional resources have been allocated nationally.

This study does have some limitations to consider. First, our measures of attitudes about resource allocation were limited. We were unable to assess reasons why individuals agreed or disagreed that resources should be increased, and we also did not have a question about increasing resources for the general population to compare levels of support. We also did not have a comprehensive measure of stigma towards PWUD in this study, only a single item related to willpower. Our measure of familiarity with people who use drugs is also limited, as only experiences with individuals with an opioid addiction were assessed. A more comprehensive assessment of stigma would have allowed for insights into which aspects of stigma are particularly important for resource allocation attitudes. We also were unable to assess any intersectional stigmas and attitudes related to individuals who may be experiencing homelessness and use drugs.

Conclusions

We identified significant differences in public support for additional resource allocation for individuals with low income or who are experiencing homelessness compared to PWUD. Our results highlight the importance of stigma against PWUD in the context of COVID-19. In this study we found that United States adults were much less likely to endorse providing resources to PWUD than for other vulnerable populations. Results identify that opinions on resource allocation to PWUD are associated with political ideology and attitudes towards PWUD. These public opinions can have significant impacts on policy decisions when allocating resources. It is imperative to continue to address stigma towards people who use drugs as they face dual epidemics of COVID-19 and overdose. Our findings suggest the importance of demonstrating the intersectional nature of substance use, promoting programs to reduce drug use stigma, and providing the public with a greater understanding of how drug dependence is often due to the social and economic circum-

stances as well as a life course history that frequently includes abuse, neglect, and economic and social deprivation. Furthermore, it is critical that COVID-19 prevention materials are allocated using a human-rights framework, where every person has the right to health, rather than a partisan perspective.

Declaration of ethics

This study was approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

Funding

This study was supported by the Alliance for a Healthier World and the National Institute on Drug Abuse (NIDA; R01DA040488). KES was supported by a NIDA training grant (5T32DA007292). The funding organization had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

Declarations of Interest

None.

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