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Associations between partisan media consumption, opioid use disorder stigma, and opioid policy support: An exploration of the media's role in the ongoing opioid epidemic

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ABSTRACT

We report on a preliminary investigation into the relationship between partisan media consumption (PMC) among U.S. adults and their (1) opioid use disorder (OUD) stigma, (2) national OUD policy support (e.g., Medicaid coverage for OUD treatment), (3) local OUD policy support (e.g., safe injection sites), (4) discriminatory OUD policies (e.g., denying housing), and (5) carceral OUD policies (e.g., jailing people who use opioids). We performed a cross-sectional survey of a nationally-representative sample of U.S. adults (n = 6,515) from October 1-November 19, 2021. We surveyed a sample of U.S. adults ages 18 and older drawn from NORC's AmeriSpeak® Panel. AmeriSpeak is a probability-based ongoing panel of over 40,000 households designed to represent the U.S. household population. Cross-sectional analyses revealed significant relationships between PMC and OUD stigma (b = 0.29, p <.001, CI_{95} = 0.14,0.43), support for national (b = -0.31, p <.01, CI_{95} = -0.54,-0.09) and local policy responses (b = -0.38, p <.001, CI_{95} = -0.59,-0.17), and support for discriminatory opioid use disorder policies (b = 0.27, p <.01, CI_{95} = 0.07,0.45). After controlling for self-reported political affiliation and other potential covariates, Republican-leaning media consumption was significantly associated with increased OUD stigma, less support for national and local harm reduction or rehabilitative policies, and more support for discriminatory policies against individuals experiencing OUD. The opposite associations were observed for Democratic-leaning media consumption. Markers for racism mediated the relationship between PMC and support for carceral policies (indirect path b = -0.41,p <.001, CI_{95} = -0.50,-0.31). Our results indicate that public health advocates must collaborate with conservative leaders to find bipartisan common ground for targeted communication campaigns.

1. Introduction

America's ongoing opioid epidemic has taken a strikingly fatal turn in the last decade (Centers for Disease Control and Prevention, 2022). The rate of synthetic opioid use increased almost 7.5 times from 2015 to 2021, with more than 80,411 deaths from opioid overdoses occurring in 2021 (Institute, 2023).

Opioid use disorder (OUD) is a problematic pattern of opioid use leading to clinically significant impairment or distress. This pattern can include health problems, disability, and failure to meet major work, school, or home responsibilities (American Psychiatric Association and Association, 2013). More than three million people in the United States are considered opioid-dependent and would meet the criteria for OUD (Dydyk et al., 2022). Less than 30% of adults with OUD receive treatment (Saini et al., 2022).

OUD stigma is a significant barrier to implementing evidence-based

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policies and interventions to support individuals experiencing OUD (Kennedy-Hendricks et al., 2017). Although medications for opioid use disorder (MOUD) can reduce mortality by 50% (Academies, 2019), internalized OUD stigma reduces the likelihood that a person experiencing OUD will seek evidence-based treatment and care (Tsai et al., 2019). Moreover, U.S. adults who endorse OUD stigma are less likely to vote in favor of evidence-based drug treatment policies and interventions that support individuals with OUD (Barry et al., 2014).

Media news story language and imagery affect the public's stigmatization of people living with OUD and thus influence public attitudes towards effective responses to the opioid epidemic. Partisan media consumption (PMC) can rapidly amplify stigma toward and around an unfamiliar illness (Grivel et al., 2021) and critical differences in public opinions regarding public health policies and safety behaviors (Clinton et al., 2021). For example, exposure to *Fox News* for COVID-19 information was also associated with increased stigmatization of people of Asian descent during COVID-19 in the United States (Grivel et al., 2021).

Media coverage of the opioid epidemic may also influence stigmatizing attitudes towards those with OUD and public support for related public health policies. McGinty and colleagues (McGinty et al., 2019) examined 6,399 news stories from July 2008 through June 2018. These researchers observed that 49% of the stories mentioning the opioid epidemic included stigmatizing terms and that the proportion of news stories mentioning stigmatizing terms increased from 37% in July 2008 – June 2009 to 45% in July 2017 – June 2018 (McGinty et al., 2019).

This paper explores how PMC may relate to U.S. adults' OUD stigma and support for related OUD policies. We also examine the mediating role of racism, as attitudes and perceptions toward racial issues may mediate U.S. adults' perceptions of drug use (Pyra et al., 2022).

2. Method

2.1. Participants

We surveyed a general population sample of U.S. adults ages 18 and older drawn from NORC at the University of Chicago's AmeriSpeak® Panel. AmeriSpeak is a probability-based ongoing panel of over 40,000 households designed to represent the U.S. household population. For AmeriSpeak, a stratified random sample of U.S. households is selected and sampled using area probability and address-based sampling, with a known, nonzero probability of selection from the NORC's National Sample Frame. The panel provides sample coverage of approximately 97% of the U.S. household population (Dennis, 2019).

AmeriSpeak collected 6,515 interviews, 6,235 by web and 280 by phone. 6,453 of these respondents responded to all survey questions. Total and segmented sample weighted percentages can be found in Table 1.

2.2. Procedures

The survey was offered in English and Spanish from October 1-November 19, 2021. Participants received the cash equivalent of $25 for completing the survey. Of the 17,075 individuals contacted, 6,515 (38.1%) completed the survey, and when factoring in our 37% panel participation rate, leads to our overall response rate of about 14%. The weighted AAPOR RR III for the AmeriSpeak panel recruitment was 19.1%. As of November 2015, the weighted household recruitment rate (RECR) for the AmeriSpeak panel was 36.9%. This compares favorably with Pew's ATP cumulative panel response rate of 3.5% and the Gallup Panel response rate at 8%, and is attributable to AmeriSpeak's two-phase panel recruitment strategy (Montgomery et al., 2016). The study was approved by the NORC's Institutional Review Board.

The survey consisted of about 50 items with a median duration of 30 min. In addition to outcome and independent variables, we also included measures of self-perceived health and financial standing, age, gender, personal and family history with opioids, region, and past criminal justice system involvement. We also include several scales in our analysis, including medical mistrust, the MHI-5 mental health inventory, and the CoBRAS measure of racial attitudes (Neville et al., 2000).

Data were weighted to better represent the overall U.S. population, considering age, gender, census division, race/ethnicity, education, housing tenure, and household phone status. Panel base sampling weights for all sampled housing units are computed as the inverse of the probability of selection from the NORC National Frame (the sampling frame used to sample housing units for AmeriSpeak) or address-based sample.

3. Measures

3.1. Outcome variables

Opioid use disorder stigma. Participants' self-reported opioid use disorder (OUD) stigma was measured using a 6-item measure adapted from prior stigma survey research (Kennedy-Hendricks et al., 2017; Yang et al., 2019) and measured using a five-point Likert-type scale from *strongly disagree* (1) to *strongly agree* (5). Participants were asked about their OUD attitudes, including their willingness to have people with current or past histories of OUD as co-workers and the perceived dangerousness and trustworthiness of individuals living with OUD ($\alpha = 0.83$).

Opioid policy scales. Following Kennedy-Hendricks and colleagues (Kennedy-Hendricks et al., 2017), participants' attitudes toward national (3 items), local (3 items), discriminatory (4 items), and carceral OUD policies (3 items) were assessed using 13 items measured on a five-point Likert-type scale from *strongly disagree* (1) to *strongly agree* (5) (Table 2). National (e.g., Medicaid expansion to cover OUD treatment, increased government spending to improve OUD treatment) ($\alpha = 0.78$) and local policy (e.g., local safe consumption sites, syringe service programs for people who use drugs in your community) ($\alpha = 0.75$) scales are averages of support for opioid harm reduction policies at national and local levels. Discriminatory policy support indicates support for discrimination against those with OUD ($\alpha = 0.74$). Carceral policy support indicates support for punitive carceral action against those with OUD ($\alpha = 0.94$). We found relatively low support for safe consumption sights, moderate support for syringe services, and high support for naloxone provision, while support for national-level policy is homogenously strong for all items surveyed.

3.2. Independent variables

Partisan Media Consumption. We surveyed participants to identify their preferred sources for health information from a list of 18 options, such as local print, national print, *CNN/MSNBC*, *Fox News*, social media, radio, personal network, employer, and more. To create the PMC variable, first, we categorized interpersonal communication sources, like personal network, church, employer, community-based organizations, and others, into an Interpersonal Communication variable, which we elaborate on below. Second, with the remaining 14 media source options, we followed a statistical approach adapted from previous research (Gerber and Huber, 2010). Participants were asked if they self-identify as Democrats, Republicans, Independents, or None of These. For Democrat and Republican responses, participants were asked if they considered themselves 'strong' or 'not so strong' affiliated. Independent respondents were asked if they lean Democrat, lean Republican, or don't lean. After collapsing strong and lean responses into respective single-category affiliations, we conducted a regression analysis, comparing participants' self-reported political affiliations (–1 = Democratic, 0 = Independent, and 1 = Republican) with each of the media sources individually. This process generated partisan coefficients for each media source. Third, we added up these coefficients for the sources each respondent reported using and divided the sum by the number of sources

Table 1
Weighted population-based sample percentages of participants in the AmeriSpeak survey– Fall 2021 (n = 6,515) including a breakdown by self-reported political affiliation.

Categorical Response Variables

		Self-Reported Political Affiliation		
Variable	**Overall**	**Neither (%)**	**Democrat (%)**	**Republican (%)**
Gender				
Female	53.3	50.4	59.1	49.9
Male	46.7	49.6	40.9	50.1
Race				
Non-Hispanic White	62.8	65.1	48.9	78.7
Non-Hispanic Black	12.2	9.3	23.3	1.2
Hispanic	16.6	17.2	18.3	13.0
Other	8.4	8.4	9.4	7.1
Age				
18–24	10.1	12.0	10.7	6.3
25–34	17.7	22.2	14.8	14.4
35–44	17.1	19.9	15.2	15.4
45–54	14.5	13.4	14.6	16.0
55–64	18.3	15.6	18.9	22.0
65–74	15.9	12.1	18.9	17.9
75+	6.4	4.8	7.0	8.0
Education				
Less than HS graduate	8.8	10.8	8.3	6.4
HS graduate or equivalent	27.0	27.4	24.3	30.1
Vocational/tech/some college/associate	27.9	28.1	25.1	31.4
Bachelor's degree	21.2	20.3	22.5	20.6
Post-grad study/professional degree	15.2	13.5	19.8	11.5
Region				
Northeast	17.4	16.0	19.2	17.2
Midwest	20.3	20.7	19.6	20.6
South	38.5	39.2	36.5	40.2
West	23.8	24.1	24.6	22.1
Sexual Orientation				
Heterosexual	92.3	91.3	89.1	98.4
All Other	7.7	8.7	10.9	1.6
Marital Status				
Currently Married	47.1	44.3	42.8	57.8
All Other	52.9	55.7	57.2	42.2
Income				
Under $30,000	25.8	28.4	27.3	19.4
$30,000 to under $60,000	26.3	27.6	24.3	27.0
$60,000 to under $100,000	23.6	23.3	22.3	26.0
$100,000 or more	24.3	20.7	26.1	27.5
Employment				
Employed	54.5	57.0	51.4	54.9
Retired	21.5	17.7	23.3	25.2
All Other	24.0	25.4	25.2	19.9
General Health				
Excellent	7.5	7.2	7.6	7.9
Very Good	36.5	34.4	35.4	41.2
Good	37.2	38.7	36.1	36.3
Fair	15.8	16.1	18.2	11.9
Poor	3.0	3.5	2.7	2.6
Money Self-Perception				
A very poor person in terms of money	8.7	10.6	8.9	5.2
A somewhat poor person in terms of money	30.7	33.8	30.5	25.8
Not a poor person in terms of money	60.7	55.6	60.6	69.1
Paycheck Self-Perception (Living Paycheck-to-Paycheck)	43.3	47.5	41.6	38.7
Personal Ever Opioid Use (Yes)	10.9	13.9	8.0	10.0
Family Ever Opioid Use (Yes)	39.2	44.6	35.0	36.4
Personal Ever Opioid Overdose (Yes)	1.3	2.3	0.6	0.8
Personal Ever Criminal Justice Involvement (Yes)	14.7	19.1	12.1	11.2
Interpersonal Communication for Health Info				
Yes	51.0	50.4	50.2	45.1
No	49.0	49.6	49.8	54.9

Continuous Response Variables

Variable	**Overall**	**Neither**	**Democrat**	**Republican**
Partisan Media Consumption	-0.11	-0.11	-0.20	0.00
Media Count	4.02	3.83	4.62	3.46
OUD Stigma	3.31	3.25	3.23	3.49
National Policy Support	3.73	3.68	4.06	3.35
Local Policy Support	3.18	3.18	3.52	2.70
Discrimination Policy Support	2.94	2.91	2.73	3.26

(*continued on next page*)

Table 1 (*continued*)

Continuous Response Variables

Variable	Overall	Neither	Democrat	Republican
Carceral Policy Support	2.96	2.89	2.72	3.42
Medical Mistrust	1.93	2.08	1.78	1.91
Racism	1.88	1.94	1.21	2.71
Mental Health	4.50	4.40	4.39	4.79

Notes. Mental Health (MHI-5) was measured on a 6-point scale. OUD Stigma, National Policy Support, Local Policy Support, Discrimination Policy Support, Carceral Policy Support, and Racism (CoBRAS) were measured on a 5-point scale. Lower scores for policy measures indicate increased support for harm reduction and rehabilitative policies.

Table 2
Opioid Policy Scale Items from the AmeriSpeak survey– Fall 2021 (n = 6,515).

National OUD Policy (3 items)	Do you disagree or agree with the following statements? 1. I favor expanding Medicaid insurance benefits for low income families to provide coverage for treatment of opioid use disorders/addiction problems, including addiction to prescription pain medications 2. I favor making naloxone (also known as "Narcan"), a medication that can quickly reverse the effects of a person experiencing an opioid overdose, widely available and affordable without a prescription 3. I favor increasing government spending to improve treatment of opioid use disorder/addiction
Local OUD Policy (3 items)	Do you support or oppose the following policy: 1. Legalization of safe consumption sites in your community 2. The availability of naloxone (a medication designed to rapidly reverse opioid overdose) at safe consumption sites if legalized in your community 3. Legalization of syringe services programs for drug users in your community
Discriminatory OUD Policy (4 items)	Do you disagree or agree with the following statements? 1. High schools and colleges should be allowed to dismiss or expel a person with an opioid use disorder. 2. Physicians and other healthcare providers should be allowed to refuse to treat a person with an opioid use disorder. 3. Employers should be allowed to deny employment to a person with a current opioid use disorder. 4. Landlords should be allowed to deny housing to a person with a current opioid use disorder.
Carceral Policy (3 items)	Do you disagree or agree with the following statements? 1. I favor arresting and prosecuting people who obtain opioids/pain medication from sources other than a medical provider. 2. I favor arresting and prosecuting people who use opioids in ways other than exactly as prescribed by a medical provider. 3. People found guilty of non-medical use opioids/prescription pain medication need to be sentenced to jail or prison.

chosen to give each source an average PMC score. If a participant didn't select any of the 18 sources, their score was 0. This method allowed us to capture both the direction and strength of media partisanship without making arbitrary left- or right-leaning classifications for specific sources. In our scoring system, higher PMC scores indicate a greater inclination toward Republican-leaning media for health information (e.g., *Fox News* = 0.33), while lower scores suggest a preference for Democratic-leaning media (e.g., *CNN/MSNBC* = -0.48). We calculated a partisan media consumption (PMC) score for each participant (range −0.62 to 0.60). This score indicates the degree of media partisanship in their health information sources, with 0 signifying a neutral stance, a positive score suggesting a Republican-leaning, and a negative score indicating a Democratic-leaning.

Interpersonal Communication. A variable representing interpersonal communication was created using the remaining items from the health information question (personal network, church, employer, community-based organizations, and other) with 'Yes' coded as a participant selecting *any* of those resources as their source of health information.

Markers for racism. We utilized the Color-Blind Racial Attitudes Scale (CoBRAS) to assess aspects of color-blind racial attitudes: Unawareness of Racial Privilege, Institutional Discrimination, and Blatant Racial Issues (Neville et al., 2000). An example of a CoBRAS item is: "Racial and ethnic minorities do not have the same opportunities as white people in the U.S.".

The CoBRAS uses eight items on a five-point Likert-type scale from *strongly disagree* (1) to *strongly agree* (5) to measure how much individuals maintain attitudes that serve to deny, distort, or minimize the existence of racism. Higher CoBRAS scores indicate stronger racism (α = 0.92).

History of opioid misuse. Participants' personal and family opioid use history was assessed by asking if they or anyone in their family had "ever misused (i.e., used other than exactly as prescribed for you) opioids of any kind – such as heroin, fentanyl, or other prescription pain medications." Personal opioid overdose history was assessed with two "Yes" or "No" items representing recent and ever use.

Experience with the criminal-legal system. Participants' experience with the criminal-legal system was assessed by asking whether they had ever had a conviction for a misdemeanor or felony crime or had ever been incarcerated in jail or prison using a "Yes" or "No" item.

Mental health. Respondents' mental health was assessed using the five-item Mental Health Inventory-5 (MHI-5) (Berwick et al., 1991). Five questions assessed participants' mental health during the past month. Responses were assessed using a 6-point Likert-type scale (α = 0.88). High scores on the MHI-5 indicate good mental health.

Medical Mistrust. Medical mistrust was measured using seven items from Corbie-Smith et al (Corbie-Smith et al., 2002). Our measure included items (n = 4) referring to one's trust in their physician and items (n = 3) referring to one's trust in institutions related to medical research. Five-point response categories were used ('strongly disagree' to 'strongly agree') (α = 0.86).

Personal characteristics. We collected participants' sociodemographic characteristics using the AmeriSpeak panel, which updates these items annually, including age, sex, race/ethnicity, education, and region. We specifically queried political affiliation, household income, and employment on this survey to obtain contemporaneous measures. We also assessed participants' perceptions of their general health, poverty, and paycheck-to-paycheck living.

3.3. Analytic plan

We checked for multicollinearity by evaluating the variance inflation factors (VIF) of all variables in the model. No VIF exceeded 5, the accepted threshold for high collinearity (Menard, 1995). We conducted five separate linear regressions exploring the predictive power of PMC

Table 3
Media and interpersonal communication source means and 95% confidence intervals for outcome variables of participants in the AmeriSpeak survey (n = 6,515) – Fall 2021.

Source	Count	Average Partisan Score	OUD Stigma	National Policy Support	Local Policy Support	Discriminatory Policy Support	Carceral Policy Support
Broadcast TV (*ABC*, *NBC*, *CBS*)	2677	-0.27	3.34 (3.30, 3.38)	3.83^{+++} (3.78, 3.90)	3.29^{+++} (3.23, 3.36)	2.93 (2.88, 2.99)	2.96 (2.89, 3.04)
State or Local Government	2494	-0.28	3.30 (3.26, 3.35)	3.88^{+++} (3.82, 3.94)	3.36^{+++} (3.29, 3.42)	2.86^{++} (2.81, 2.92)	2.85^{+++} (2.77, 2.92)
Federal Government	2321	-0.39	3.27 (3.23, 3.32)	4.01^{+++} (3.95, 4.07)	3.50^{+++} (3.43, 3.57)	2.81^{+++} (2.75, 2.86)	2.71^{+++} (2.63, 2.79)
Online News Sites	2061	-0.22	3.27 (3.21, 3.32)	3.87^{+++} (3.80, 3.94)	3.35^{+++} (3.26, 3.43)	2.87^{++} (2.80, 2.93)	2.77^{+++} (2.68, 2.86)
Web Search Engine (Google, Bing, etc.)	1984	-0.18	3.29 (3.23, 3.34)	3.79^{+} (3.72, 3.86)	3.29^{+++} (3.21, 3.37)	2.90 (2.84, 2.97)	2.90 (2.82, 2.99)
CNN or MSNBC	1862	-0.48	3.26^{+} (3.21, 3.31)	3.98^{+++} (3.90, 4.05)	3.44^{+++} (3.36, 3.51)	2.76^{+++} (2.69, 2.82)	2.75^{+++} (2.67, 2.84)
Local Print (e.g., local newspapers)	1540	-0.21	3.38** (3.33, 3.43)	3.87^{+++} (3.80, 3.94)	3.29^{++} (3.20, 3.38)	2.92 (2.85, 2.99)	2.95 (2.86, 3.03)
Social Media	1520	-0.21	3.24^{+} (3.19, 3.30)	3.88^{+++} (3.80, 3.95)	3.34^{+++} (3.25, 3.42)	2.84 (2.76, 2.91)	2.91 (2.81, 3.01)
Radio News	1382	-0.19	3.32 (3.26, 3.39)	3.80 (3.72, 3.89)	3.26 (3.16, 3.36)	2.92^{++} (2.85, 3.00)	2.89 (2.79, 2.98)
Fox News	1300	0.33	3.51*** (3.45, 3.57)	3.46*** (3.37, 3.55)	2.79*** (2.70, 2.87)	3.15*** (3.07, 3.22)	3.33*** (3.24, 3.41)
President Joe Biden	1270	-0.62	3.25^{+} (3.18, 3.31)	4.05^{+++} (3.97, 4.14)	3.50^{+++} (3.40, 3.60)	2.74^{+++} (2.66, 2.82)	2.68^{+++} (2.57, 2.78)
National Print (e.g., USA Today)	1077	-0.35	3.28 (3.21, 3.34)	3.96^{+++} (3.87, 4.06)	3.48^{+++} (3.38, 3.59)	2.80^{++} (2.70, 2.90)	2.69^{+++} (2.57, 2.81)
YouTube or Online Video Platforms	816	-0.11	3.26 (3.17, 3.35)	3.82^{+} (3.72, 3.92)	3.22 (3.10, 3.35)	2.93 (2.82, 3.03)	2.90 (2.77, 3.03)
President Donald Trump	386	0.44	3.41 (3.29, 3.53)	3.56* (3.40, 3.72)	2.92** (2.74, 3.11)	3.11* (2.96, 3.27)	3.24*** (3.07, 3.41)
Total	6453	-0.13	3.30 (3.28, 3.33)	3.73 (3.69, 3.77)	3.18 (3.13, 3.22)	2.93 (2.90, 2.97)	2.96 (2.92, 3.01)

Notes. Partisan scores for media sources are calculated by averaging the Political Identification scores for each participant who selected that media source as a source for health information (Democrat = -1, Independent = 0, Republican = 1). See Method section for the full explanation of the PMC variable calculation. OUD stigma and policy scales measured from *strongly disagree* (1) to *strongly agree* (5) such that higher scores represent higher levels of endorsement. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$ indicate more punitive or hostile attitudes toward OUD than the global mean. $^{+}p < .05$, $^{++}p < .01$, $^{+++}p < .001$ indicate less punitive or hostile attitudes toward OUD than the global mean (i.e., more support for harm reduction and rehabilitative policies).

Table 4
Unstandardized regression coefficients with 95% confidence intervals by outcome variable of participants in the AmeriSpeak survey (n = 6,515) - Fall 2021.

Variable	Opioid Use Disorder Stigma	National Policy Support	Local Policy Support	Discriminatory Policy Support	Carceral Policy Support
Partisan Media Consumption	0.29***	-0.31**	-0.38***	0.27**	0.21
	(0.14, 0.43)	(-0.54, -0.09)	(-0.59, −0.17)	(0.07, 0.45)	(-0.01, 0.43)
Interpersonal Communication	-0.02	-0.10*	-0.02	0.02	0.02
	(-0.08, 0.04)	(-0.18, -0.02)	(-0.11, 0.06)	(-0.06, 0.10)	(-0.09, 0.12)
Media Count	0.01	0.03***	0.02**	-0.01	-0.00
	(-0.00, 0.01)	(0.02, 0.04)	(0.01, 0.04)	(-0.02, 0.01)	(-0.02, 0.02)
Personal Ever Opioid Use	-0.19***	0.06	0.19*	-0.26***	-0.48***
	(-0.29, -0.10)	(-0.08, 0.20)	(0.04, 0.33)	(-0.39, -0.13)	(-0.63, -0.32)
Family Ever Opioid Use	-0.01	0.21***	0.07	-0.04	-0.11*
	(-0.07, 0.05)	(0.13, 0.29)	(0.01, 0.15)	(-0.12, -0.03)	(-0.20, -0.01)
Personal Ever Opioid Overdose	0.12	0.57***	0.43**	-0.46*	0.02
	(-0.14, 0.38)	(0.25, 0.88)	(0.11, 0.75)	(-0.86, -0.06)	(-0.40, 0.46)
Personal Ever Criminal Justice Involvement	−0.04	0.03	0.18**	0.03	0.01
	(-0.12, 0.05)	(-0.09, 0.15)	(0.06, 0.31)	(-0.08, 0.15)	(-0.13, 0.15)
Medical Mistrust	0.01	-0.13***	-0.10***	−0.00	-0.02
	(-0.03, 0.05)	(-0.18, -0.08)	(-0.16, -0.04)	(-0.06, 0.05)	(-0.08, 0.05)
Mental Health	-0.00	-0.02	-0.08***	-0.00	-0.01
	(-0.04, 0.04)	(-0.06, 0.03)	(-0.13, -0.04)	(-0.05, 0.04)	(-0.07, 0.04)
Racism	0.11***	-0.31***	-0.35***	0.18***	0.32***
	(0.07, 0.14)	(-0.35, -0.26)	(-0.40, -0.30)	(0.14, 0.23)	(0.27, 0.38)
Political Identification					
Independent	[reference]				
Democrat	-0.00	0.18***	0.13**	-0.05	-0.01
	(-0.07, 0.06)	(0.10, 0.27)	(0.04, 0.22)	(-0.14, 0.04)	(-0.11, 0.09)
Republican	0.06	-0.01	-0.11*	0.10*	0.23***
	(-0.00, 0.13)	(-0.11, 0.09)	(-0.22, -0.01)	(0.01, 0.20)	(0.11, 0.35)
Health (Self-Report)					
Excellent	[reference]				
Very good	-0.00	-0.05	-0.07	-0.09	0.00
	(-0.10, 0.09)	(-0.20, 0.08)	(-0.21, 0.07)	(-0.22, 0.04)	(-0.16, 0.16)
Good	-0.02	-0.06	-0.10	-0.11	-0.03
	(-0.11, 0.08)	(-0.19, 0.08)	(-0.24, 0.05)	(-0.23, 0.03)	(-0.20, 0.13)
Fair	0.05	-0.04	-0.03	-0.05	0.03
	(-0.07, 0.16)	(-0.20, 0.12)	(-0.20, 0.14)	(-0.21, 0.11)	(-0.16, 0.22)
Poor	-0.16	0.14	-0.03	-0.20	-0.17
	(-0.38, 0.05)	(-0.09, 0.36)	(-0.31, 0.24)	(-0.48, 0.08)	(-0.47, 0.12)
Variable	**Opioid Use Disorder Stigma**	**National Policy Support**	**Local Policy Support**	**Discriminatory Policy Support**	**Carceral Policy Support**
Demographics					
Marital Status (binary, married = 1)	-0.03	0.01	-0.06	0.09*	0.12*
	(-0.09, 0.09)	(-0.06, 0.09)	(-0.14, 0.02)	(0.01, 0.16)	(0.03, 0.21)
Female Gender	-0.02	0.00	-0.02	-0.09*	0.06
	(-0.11, 0.08)	(-0.08, 0.07)	(-0.10, 0.05)	(-0.17, -0.02)	(-0.04, 0.15)
LGBT Status (binary, LGBT = 1)	0.05	0.12*	0.19**	-0.21**	-0.23**
	(-0.07, 0.16)	(0.01, 0.23)	(0.05, 0.32)	(-0.35, -0.08)	(-0.40, -0.07)
Age (continuous)	0.01***	-0.01***	−-0.00*	0.00**	0.00*
	(0.01, 0.01)	(-0.01, -0.00)	(-0.01, -0.00)	(0.00, 0.01)	(0.00, 0.01)
Income					
Under $30,000	[reference]				
$30,000 to under $60,000	-0.08*	-0.04	-0.03	-0.07	-0.12
	(-0.17, -0.00)	(-0.15, 0.07)	(-0.15, 0.08)	(-0.17, 0.04)	(-0.25, 0.01)
$60,000 to under $100,000	-0.02	-0.06	0.04	0.02	-0.05
	(-0.11, 0.06)	(-0.17, 0.06)	(-0.08, 0.16)	(-0.09, 0.13)	(-0.18, 0.08)
$100,000 or more	0.05	-0.06	0.06	-0.03	-0.16*
	(-0.04, 0.14)	(-0.19, 0.08)	(-0.07, 0.18)	(-0.15, 0.09)	(-0.31, -0.02)

(*continued on next page*)

Table 4 (*continued*)

Variable	Opioid Use Disorder Stigma	National Policy Support	Local Policy Support	Discriminatory Policy Support	Carceral Policy Support
Employment					
All Other	[reference]				
Employed	0.11**	-0.10	-0.16**	0.14**	0.11
	(0.03, 0.19)	(-0.20, 0.00)	(-0.26, -0.05)	(0.04, 0.24)	(-0.01, 0.24)
Retired	0.06	-0.06	-0.08	0.04	0.02
	(-0.04, 0.15)	(-0.20, 0.07)	(-0.21, 0.05)	(-0.09, 0.16)	(-0.13, 0.18)
Poverty Self-Perception					
Yes, a very poor person in terms of money	[reference]				
Yes, a somewhat poor person in terms of money	-0.04	0.04	0.03	0.12	0.05
	(-0.15, 0.07)	(-0.12, 0.20)	(-0.12, 0.18)	(-0.05, 0.28)	(-0.15, 0.25)
No, I do not consider myself a poor person in terms of money	0.02	0.07	0.03	0.18*	0.16
	(-0.09, 0.13)	(-0.11, 0.25)	(-0.13, 0.19)	(0.02, 0.34)	(-0.04, 0.36)
Paycheck-to-Paycheck Self Perception					
Paycheck-to-Paycheck Self-Perception	-0.06	0.16**	0.02	-0.04	0.08
	(-0.12, 0.00)	(0.06. 0.25)	(-0.07,0.12)	(-0.13, 0.04)	(-0.02, 0.18)
Race/Ethnicity					
NH White	[reference]				
Variable	**Opioid Use Disorder Stigma**	**National Policy Support**	**Local Policy Support**	**Discriminatory Policy Support**	**Carceral Policy Support**
NH Black	0.15*	-0.31***	-0.53***	0.06	0.37***
	(0.03, 0.27)	(-0.45, −0.17)	(-0.68, −0.38)	(-0.08, 0.20)	(0.20, 0.55)
Hispanic	0.13**	-0.26***	-0.28***	0.10	0.36***
	(0.05, 0.21)	(-0.38, -0.14)	(-0.39, -0.17)	(-0.00, 0.20)	(0.23, 0.50)
NH Asian, 2+, other	0.07	-0.10	-0.17*	0.07	0.44***
	(-0.01, 0.16)	(-0.22, 0.02)	(-0.33, -0.01)	(-0.08, 0.22)	(0.30, 0.58)
Education					
Less than HS graduate	[reference]				
HS graduate or equivalent	-0.03	0.07	0.08	−0.06	- 0.17
	(-0.16, 0.10)	(-0.14, 0.27)	(-0.10, 0.27)	(-0.23, 0.11)	(-0.37, 0.05)
Vocational/tech school/some college/ associates	-0.03	0.01	0.06	-0.09	-0.24*
	(-0.15, 0.09)	(-0.19, 0.21)	(-0.11, 0.23)	(-0.26, 0.07)	(-0.45, -0.03)
Bachelor's degree	0.03	0.01	0.04	-0.06	-0.27*
	(-0.10, 0.15)	(-0.19, 0.22)	(-0.14. 0.22)	(-0.22, 0.11)	(-0.48, -0.05)
Post-grad study/professional degree	-0.05	0.05	0.17	-0.13	-0.41***
	(-0.18, 0.08)	(-0.17, 0.26)	(-0.03, 0.37)	(-0.30, 0.05)	(-0.64, -0.18)
Region					
Northeast	[reference]				
Midwest	0.01	0.11	0.09	0.05	0.19*
	(-0.08, 0.09)	(-0.00, 0.22)	(-0.03, 0.21)	(-0.06, 0.16)	(0.04, 0.33)
South	-0.01	0.08	0.20***	0.11*	0.09
	(-0.09, 0.06)	(-0.02, 0.17)	(0.08, 0.27)	(0.02, 0.20)	(-0.02, 0.21)
West	-0.02	0.13*	0.11*	0.11*	0.04
	(-0.10, 0.05)	(0.02, 0.23)	(0.00, 0.21)	(0.01, 0.20)	(-0.08, 0.16)

Notes. Mental health = Mental Health Inventory-5 (MHI-5). Racism = Color-Blind Racial Attitudes Scale (CoBRAS). NH = Non-Hispanic. HS = High school. LGBT status is coded so 0 = heterosexual and 1 = LGBT status. Marital status is coded such that 1 = married and 0 = status other than married. Age was added as a continuous variable. *p <.05, **p <.01, ***p <.001. OUD stigma and policy scales measured from *strongly disagree* (1) to *strongly agree* (5) such that higher scores represent higher levels of endorsement.

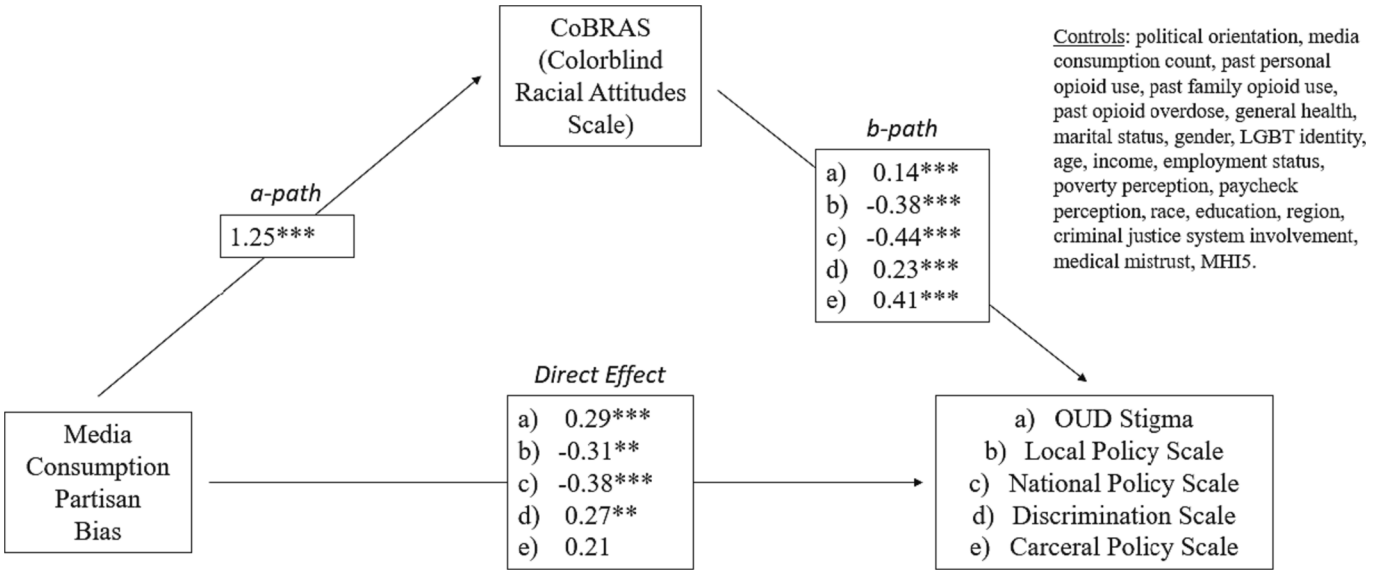

Fig. 1. Analysis of the relationship between partisan media consumption and OUD attitude outcome variables, as mediated by a measure of participants' racial attitudes in the AmeriSpeak survey (n = 6,515) - Fall 2021. OUD stigma and policy scales measured from *strongly disagree* (1) to *strongly agree* (5) such that higher scores represent higher levels of endorsement. *p < 0.5, **p < 0.01, ***p < 0.001.

on (1) OUD stigma, (2) national OUD policy support (e.g., Medicaid coverage for OUD treatment), (3) local OUD policy support (e.g., safe injection sites in the participant's community), (4) discriminatory OUD policies (e.g., denying housing), and (5) carceral OUD policies (e.g., jailing people who use opioids) while controlling for the independent variables and personal characteristics listed above. We also conducted a mediation analysis with the same controls to investigate indirect relationships between PMC and the five outcomes of interest as mediated by the CoBRAS scale. This analysis was executed via structural equation modeling. All analyses were conducted in Stata 16.1.

4. Results

We first explored the mean scores and 95% confidence intervals among outcome variables by media source for health information. These results can be found below in Table 3.

Overall regression models in Table 3 indicated significant model fit for OUD stigma, $F(38, 6251) = 11.73$, $r^2 = 0.15$, $p < .001$, national OUD policy support (e.g., Medicaid coverage for OUD treatment), $F(38, 6251) = 30.69$, $r^2 = 0.23$, $p < .001$, local OUD policy support (e.g., safe injection sites), $F(38, 6251) = 30.95$, $r^2 = 0.27$, $p < .001$, support for discriminatory policies against individuals experiencing OUD (e.g., denying housing), $F(38, 6251) = 13.94$, $r^2 = 0.15$, $p < .001$, and support for carceral policies (e.g., jailing people who use opioids), $F(38, 6251) = 19.91$, $r^2 = 0.20$, $p < .001$.

As seen in Table 3, PMC was significantly associated with virtually every dependent variable after controlling for a wide range of potential confounders (including self-reported partisanship). In other words, after controlling for self-reported political affiliation and other potential covariates, Republican-leaning media consumption was significantly associated with increased OUD stigma, less support for national (e.g., Medicaid coverage for OUD treatment) and local harm reduction or rehabilitative policies, and more support for discriminatory policies (e.g., denying housing) against individuals experiencing OUD. The opposite associations were observed for Democratic-leaning media consumption. One notable exception was that PMC was not associated with support for carceral policies against individuals experiencing OUD, $b = 0.21$, $p = .07$.

As seen in Table 4, PMC was the strongest correlate of OUD stigma. It was the second-strongest correlate of national OUD policy support (behind personal opioid overdose history) and support of discriminatory OUD policies (behind personal opioid overdose history). PMC was the third-strongest correlate of local OUD policy support (behind personal opioid use history and identifying as Non-Hispanic Black). Support for carceral policies was most strongly associated with personal opioid use history (negatively) ($b = -0.48$), minority racial status (Other $b = 0.44$, NH Black $b = 0.37$, and Hispanic $b = 0.36$), and Republican affiliation ($b = 0.23$).

As seen in Fig. 1, mediation results exploring the role of racism as a mediator between PMC and outcomes indicated partial indirect effects of PMC as mediated by markers of racism on OUD stigma (indirect path $b = -0.13$, $p = <0.001$), national OUD policy support (e.g., Medicaid coverage for OUD treatment) (indirect path $b = 0.38$, $p < .001$), local OUD policy support (e.g., safe injection sites) (indirect path $b = 0.44$, $p < .001$), and discriminatory OUD policies (e.g., denying housing) (indirect path $b = -0.23$, $p < .001$). The direct effects on carceral OUD were not significant. PMC was associated with U.S. adults' racism, which was associated with U.S. adults' OUD stigma attitudes and support for harm reduction and rehabilitative OUD policies.

Put differently, increased racism was associated with PMC, which was associated with increased OUD stigma and support for discriminatory policies (e.g., denying housing) and reduced support for national and local harm reduction rehabilitative policies (e.g., Medicaid coverage of treatment and safe injection sites, respectively). The mediation results also indicate total indirect effects of PMC as mediated by markers of racism on carceral OUD policy support ($b = -0.41$, $p < .001$). In other words, U.S. adults' attitudes toward carceral OUD policies (e.g., jailing people who use opioids) based on PMC were significantly associated with their markers of racism rather than their PMC. However, their PMC is hypothesized to influence their markers of racism.

5. Discussion

Our analysis revealed statistically significant relationships between PMC and OUD stigma, national OUD policy support (e.g., Medicaid coverage for OUD treatment), local OUD policy support (e.g., safe injection sites), and discriminatory OUD policy support (e.g., housing discrimination against individuals experiencing OUD) among a nationally representative sample of U.S. adults. Respondents who reported receiving health information from Republican-leaning sources were

markedly more likely to report increased OUD stigma, increased support for discriminatory policies against individuals experiencing OUD (e.g., denying housing), and reduced support for harm reduction and rehabilitation policies. We found the opposite associations for participants who reported receiving health information from Democratic-leaning media sources.

Our findings suggest that the balkanization of the media landscape may be hindering our country's ability to respond to the opioid epidemic. However, longitudinal evidence which teases out granular differences between media consumption and partisanship is needed to explore this potential phenomenon further. Republican-leaning media coverage of the opioid epidemic – particularly *Fox News* – may already be enhancing stigmatizing attitudes toward those with OUD among vast audiences (McGinty et al., 2019), which hinders policymakers' and public health practitioners' ability to garner public support for evidence-based policies. While there appears to be growing bipartisan support for evidence-based OUD solutions (Doyle and Baaklini, 2023), two-thirds of U.S. adults still direct blame toward individuals experiencing OUD for the ongoing epidemic (Orth, 2023). Further, OUD stigma still appears to affect the availability of life-saving drugs in rural and impoverished urban areas where independent pharmacists do not want to engage with individuals experiencing OUD (Over-the-Counter and Lives, March 28, 2023.; Evoy et al., 2021).

We also observed that U.S. adult consumption of most mainstream media outlets for health information was associated with diminished OUD stigma and increased support for harm reduction and rehabilitative policies rather than carceral or discriminatory policies. *Fox News,* the most-watched cable news network in the United States, provides one prominent exception to this pattern. Consistent with prior public health research (Clinton et al., 2021; Borah et al., 2023), *Fox News* consumption was associated with reduced support for evidence-based public health measures. Here, *Fox News* consumption is strongly associated with increased OUD stigma, increased support for discriminatory (e.g., denying housing) and carceral OUD policies (e.g., jailing people who use opioids), and reduced support for national and local harm reduction OUD policies (e.g., Medicaid coverage of treatment and safe injection sites, respectively).

Although these patterns are concerning, they may also suggest opportunities for focused public health messaging. In domains such as suicide prevention and the promotion of red-flag laws to reduce gun violence, public policies and public health messaging can be intentionally designed for cultural competence within politically conservative communities (Leininger and Pollack, 2020; Ewing, 2016). If future longitudinal exploration of the effects of PMC supports these observations, *Fox News* programming presents the public health community with a promising avenue for communication interventions designed to improve U.S. adults' attitudes toward OUD stigma, MOUD treatment, and harm reduction policies by correctly placing anti-OUD stigma messaging by trusted messengers. Promising models exist in arenas that include gun suicide prevention, Red Flag Laws, and prison reform, infusing a message of public safety, personal responsibility to engage in treatment and to avoid behaviors that harm others, with support for interventions that support community healing and individual moral redemption through evidence-based policies (Ewing, 2016; Dagan and Teles, 2016).

Our cross-sectional findings also support the need to consider the racialized component of U.S. adults' attitudes toward OUD stigma that influence support for opioid-related interventions and policies. Republican-leaning media consumption was robustly associated with markers of racism among this nationally representative sample of U.S. adults, and racism was strongly associated with increased OUD stigma and support for discriminatory or carceral policies (e.g., denying housing and jailing people who use opioids, respectively) and diminished support and diminished support for national and local harm reductions policies (e.g., Medicaid coverage of treatment and safe injection sites, respectively). This observation was unsurprising as substance use has always been racialized in the United States (Farahmand et al., 2020).

Our results are supported by robust literature suggesting that PMC can influence markers of racism (Grivel et al., 2021; Bell et al., 2022). Further, our results indicate that racism mediated the relationship between PMC and carceral opioid policy support, underscoring another pathway through which historical and structural racism inhibit our ability to end the opioid epidemic (Dagan and Teles, 2016; Peterkin et al., 2022).

5.1. Limitations

Our cross-sectional study should be considered preliminary, and we cannot speak to any explanatory nature of the observed associations without longitudinal research. We cannot address the directional nature of PMC and participants' pre-existing partisan attitudes. While we observed significant relationships between PMC and OUD stigma and OUD policy support while controlling for self-reported partisan identification, U.S. adults may seek affirmation or validation of their beliefs in their media-seeking habits. As guided by the reinforcing spirals model (Slater, 2007), individuals' beliefs relevant to public health issues may predict partisan media exposure, impacting pre-existing beliefs and predicting further partisan media exposure (Feldman and Johnston, 2014). Similarly, we cannot confidently assert that there is no similar reinforcing spiral model of influence between U.S. adults' racism and their PMC.

The construction of our PMC variable also reflects important limitations. We used respondents' political identification scores to create a new variable. Fortunately, our analyses indicated no issues with multicollinearity, and political identification coefficients were not significantly affected in regressions on the outcome variables without the PMC variable. The variable also could not speak to the exposure volume.

As with other surveys of the American public, our study had a modest response rate (see methods section) which might have left out some segment of the American adult population. Nevertheless, the AmeriSpeak panel's response rate of 38% is one of the highest for comparable national probability based household panels (Montgomery et al., 2016). Also, we weighted our data to national census benchmarks, taking into account selection probabilities (balanced by sex, age, education, race/ethnicity, region).

6. Conclusions

These findings suggest significant cross-sectional associations between PMC, OUD stigma, and policies among U.S. adults. Our results support the need to investigate this potential phenomenon further with longitudinal research. If PMC influences OUD stigma and policy support, public health advocates must collaborate with conservative leaders to find bipartisan common ground for targeted communication campaigns. In doing so, we can show how non-stigmatizing approaches can be a mechanism to reduce opioid overdose deaths by making MOUDs more widely accessible in pharmacies and getting more individuals with OUD to initiate and stay in treatment. Indeed, it will also be a monumental task to make progress against this ongoing epidemic without addressing the inherently racial component of the issue. Much like the gains other stigmatized groups have seen in recent decades (LGBT, mental illness, intellectual and developmental disabilities), our results indicate the need for more research into the implications of the mainstream media's framing of the OUD epidemic with respect to how it may significantly impact our nation's ability to address the opioid epidemic using evidence-based practices.

CRediT authorship contribution statement

Alex Kresovich: Conceptualization, Methodology, Formal analysis, Investigation, Writing – original draft, Writing – review & editing. **Sherry L. Emery:** Conceptualization, Methodology, Formal analysis,

Writing – review & editing, Supervision. **Mateusz Borowiecki:** Software, Formal analysis, Data curation, Writing – original draft, Writing – review & editing, Visualization. **Cedasia McQueen:** Writing – original draft. **Marie Ngobo-Ekamby:** Writing – original draft. **Phoebe A. Lamuda:** Investigation, Resources, Writing – review & editing, Supervision, Project administration. **Bruce G. Taylor:** Investigation, Supervision, Funding acquisition. **Harold A. Pollack:** Investigation, Writing – review & editing, Funding acquisition. **John A. Schneider:** Investigation, Writing – review & editing, Funding acquisition.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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