

Same Story, Different Seller: Teaching the Public How Cannabis Models Driven by Profit Create the Same Injustices as Prohibition

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ABSTRACT

Objective: U.S. cannabis policy has been shaped by racism and produced racist outcomes. The legalization of cannabis for adult use represents an opportunity to end harmful policies and repair some of the damage caused by the War on Drugs. However, this opportunity may be slipping away. Large corporations with histories of exploitation are steering cannabis policy to maximize profits. Parabola Center for Law and Policy created a media campaign to educate the public about these issues and promote cannabis policies that benefit regular people. We conducted an experiment in the context of an online survey to determine whether six videos from the campaign would resonate with U.S. adults and influence beliefs about cannabis policy. **Method:** In September 2023, we conducted an online survey of 404 U.S. adults. Participants were randomized to view six *Parabola Campaign* videos featuring cannabis policy experts before or after responding to survey questions. **Results:** Participants who saw the *Parabola Campaign* videos had greater agreement that cannabis legalization should not benefit the tobacco industry, the pharmaceutical industry, and alcohol companies (all $p < .05$). They also had greater agreement that legalization should create space for small businesses, create a sharing community, and benefit people from communities that have been harmed by the Drug War (all $p < .05$). **Conclusions:** Public education can be a powerful tool to promote equity-focused cannabis policy, by raising awareness of corporate influence, promoting community-centered regulatory models, and building support for an equitable approach to federal legalization.

Key words: = cannabis; marijuana; policy; media

U.S. cannabis policy has been shaped by racism. Historically, cannabis messaging has exploited racially coded fears of criminality. This has been consistently documented, with an early example being the campaign for the Marijuana Tax Act of 1937 (National Academies of Sciences Engineering and Medicine, 2024). During the mid-1960s, “public confusion, anger, and fear” about cannabis grew, as a behavior associated with “marginal citizens” became prevalent among “children of the dominant majority” (National Commission on Marihuana and Drug Abuse, 1972). Within this social context, cannabis was

classified in 1970 as a “Schedule I” controlled substance, meaning it ostensibly had no accepted medical use and high potential for misuse (United States Drug Enforcement Administration, 2024). President Nixon appointed a commission to conduct a broad review of cannabis use in the United States, including the efficacy of existing cannabis laws (WGBH Educational Foundation, 2024). The National Commission on Marihuana and Drug Abuse—commonly referred to as the Shafer Commission—published its report in 1972 (WGBH Educational Foundation, 2024). The Commission concluded that prohibition failed to

prevent cannabis use, discouraged treatment seeking, undermined public education, and that, in general, existing cannabis law was “out of proportion to the individual and social harm engendered by the drug” (National Commission on Marihuana and Drug Abuse, 1972). Nixon disregarded the report, pouring energy into a “War on Drugs” that was later described by aide John Ehrlichmann as an excuse to criminalize Black people (Equal Justice Initiative, 2016).

Today, U.S. cannabis policy produces racist outcomes in the United States and around the globe (Acker J, 2019; Alang, et al., 2017; Alexander, 2012; Cooper, 2015; Daniels et al., 2021; Drug Policy Alliance & Harm Reduction International, 2024; Edwards et al., 2020; Mueller, Gebeloff, & Chinoy 2018; Stowe et al., 2024; Substance Abuse and Mental Health Services Administration, 2020; The Public Science Project and Drug Policy Alliance, 2021). In the United States, there are stark racial inequities in arrest rates for cannabis possession (Edwards et al., 2020). Although use of cannabis is similar by race, Black people are arrested for possession at approximately four times the rate of white people (Edwards et al., 2020; Substance Abuse and Mental Health Services Administration, 2020). Studies also document disproportionate cannabis possession arrest rates for Hispanic/Latino/a and Indigenous people (Mueller, Gebeloff, & Chinoy, 2018; The Public Science Project and Drug Policy Alliance, 2021). Arrests and other engagement with the U.S. legal system, including stops and detainments, produce negative health, financial, and social outcomes for individuals as well as for their families and communities (Acker J, 2019; Alang et al., 2017; Alexander, 2012; Cooper, 2015). The harm resulting from cannabis-related interactions with the U.S. legal system can be felt over generations (Alexander, 2012). The U.S. government has used its global influence to export its prohibitionist approach to drugs to low and middle-income countries around the world (Drug Policy Alliance & Harm Reduction International, 2024). Specifically, it has used its economic and military power to pressure countries in the Global South to adopt policies that criminalize drug use (Stowe et al., 2024). This has led to the suppression of traditional and sacred use of cannabis, despite the plant’s significant role in Rastafari, Sufi, and Hindu traditions, for example (Daniels et al., 2021). And, as in the United

States, these policies have led to the disproportionate criminalization of Black, brown, and Indigenous people (Daniels et al., 2021; Drug Policy Alliance & Harm Reduction International, 2024).

The U.S. legalization of cannabis for adult use represents an opportunity to end harmful policies and repair some of the damage caused by the War on Drugs. However, legalization in itself does not end or repair disproportionate harm. For example, although we see a marked decline in cannabis-related arrests in U.S. states that legalize cannabis for adult use, racial inequities in arrest rates remain, or grow worse (Firth et al., 2019; Gunadi & Shi, 2022). This is because the systemic racism that underlies U.S. cannabis policy persists as states create a new legal cannabis industry. Cannabis legalization provides an opportunity, however, for people and communities to become educated about past and ongoing harm. As a result, communities can choose to envision and shape policy that rejects profit-driven corporate values in favor of other social and economic models. By way of example, we see state social equity programs providing assistance for people harmed by the War on Drugs to enter the legal industry, and states committing a portion of their cannabis tax revenue to community reinvestment (Commonwealth of Massachusetts Cannabis Control Commission, 2024; Illinois Department of Commerce and Economic Opportunity, 2024; New York State Office of Cannabis Management, 2024; The State of New Jersey, 2021). Although these programs have not been fully realized, they demonstrate an openness to different policy models.

This opportunity may be slipping away. As states experiment with policies to center equity and repair harm, large corporations with histories of exploitation are steering federal cannabis policy toward the maximization of profits. Organizations such as the Coalition for Cannabis Policy, Education, and Regulation (CPEAR) lobby on behalf of members including Altria (parent company of Philip Morris), Reynolds American, and Molson Coors Beverage Company (Coalition for Cannabis Policy Education and Regulation, 2022). During the 2022 and 2024 election cycles, organizations and individuals spent more than \$10 million on cannabis lobbying. CPEAR lobbying expenditures account for about one-tenth of the total (Open Secrets, 2024). In short, the

United States is poised to legalize cannabis at the national level with substantial input from large corporations and without meaningful consideration of systems to support equity. This will “lock us in” to cannabis policy that prioritizes profit to the exclusion of equity. Small businesses will be unable to compete. State efforts to advance equity will erode. Based on historical evidence, the federal government will pave the way for the tobacco industry to target Black, brown, and low-income communities and low- and middle-income countries, marketing novel cannabis products engineered to addict (Barry, Hiilamo, & Glantz, 2014; Centers for Disease Control and Prevention, 2022; Lee, Ling, & Glantz, 2012; Unknown, 1983). Tobacco companies and other large corporations will extract profit from the same neighborhoods that have been devastated by the racist War on Drugs (Barry et al., 2014; Coalition for Cannabis Policy Education and Regulation, 2022).

Public education can play a role in averting this outcome. Studies show that although most Americans support legalization, many do not have fixed opinions about what cannabis policy should look like (Allen et al, 2023; Pew Research Center, 2022). Moreover, findings from a recent study show that an educational message is associated with greater support for specific cannabis policies that can create a more equitable industry (Allen et al., 2023). This study uses an online experiment to test the efficacy of six videos, in which cannabis policy experts invite viewers to consider policies that put regular people and small businesses first.

METHODS

Theoretical Underpinnings of the Study Design

The design of this study is based in behavior change theory, with an emphasis on the Theory of Reasoned Action and the Theory of Planned Behavior (Ajzen, 1991; Fishbein, 1967). These theories posit that beliefs underpin attitudes and social norms, which in turn contribute to intention to engage in behavior and behavior change. The Centers for Disease Control and Prevention (CDC) advises that, to achieve sufficient awareness levels to generate population-level belief and behavior change, public education campaigns should reach at least 75% of the intended audience in each quarter of the first year of a campaign (Centers for Disease Control and

Prevention, 2014). Having achieved that, and when the campaign consists of messages that resonate with and are respectful of the intended audience and which address beliefs that have “room to move,” evaluators might expect to observe belief change within 6-12 months, and behavior change within 12-18 months (Centers for Disease Control and Prevention, 2014; Hornik & Woolf, 1999; Zhao et al., 2020).

Large-scale campaign evaluations may conduct longitudinal baseline and follow-up data collections to document campaign awareness, campaign resonance, and belief and behavior change. However, these types of evaluations are often not feasible for campaigns with modest budgets, tight timelines, campaigns that have already launched, or campaigns designed for smaller, systematically underserved, and hard-to-reach populations. An alternative evaluation design is an efficacy study. An efficacy study uses an online experiment to manipulate exposure within a study sample. By comparing the beliefs of those exposed to campaign media with the beliefs of those who were not exposed, it is possible to assess the immediate, short-term effects of campaign exposure. This type of study provides insight into whether a campaign has the potential to be effective if population-level awareness is great enough.

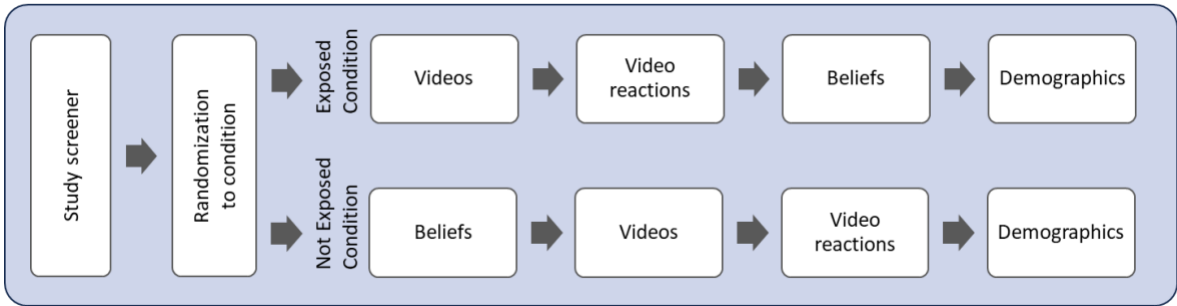
Study Design and Implementation

We conducted an experiment in the context of an online survey to determine whether six videos featuring cannabis policy experts would 1) resonate with adults in the United States and 2) influence beliefs about the future of cannabis policy. From September 12 through 25, 2023, we recruited a nonprobability sample of 404 adults aged 21 and older who were members of a Dynata panel. Dynata is a company that has developed and maintains an online group of people who participate in surveys for rewards. Individuals who were eligible and consented to participate were assigned using true randomization to one of two study conditions. Respondents in Condition One (“Exposed” Condition) watched six videos before answering questions about cannabis policy. Respondents in Condition Two (“Not Exposed” Condition) answered survey questions before watching the videos. The order in which respondents received the videos was randomized

to preclude order effects. The videos were part of a larger media campaign—the *Parabola Campaign*—that only aired publicly after this study had ended, to ensure that study participants could not have seen the videos prior to study participation. The study protocol,

consenting documents, and survey instrument were approved by RTI’s IRB. The 20-minute survey was optimized for use on mobile devices. The study design is summarized graphically in Figure 1.

Figure 1. *Parabola Campaign Study Design*



We used the survey screener to intentionally develop a nonprobability sample that was racially diverse and had good variation on political philosophy. We consider it a priority to emphasize the perspectives of Black and Latine people in research that may shape the future of cannabis policy, because Black and Latine people have been, and still are, disproportionately harmed by the War on Drugs (Edwards et al., 2020). We would have liked to screen on cannabis use to intentionally include a substantial proportion of cannabis consumers in the study. Because cannabis consumers have been and continue to be stigmatized and criminalized for their cannabis use, we think it is important to include their perspectives in research that may shape cannabis policy. However, the data collection vendor we worked with, Dynata, would not permit us to ask about cannabis use because it is illegal at the federal level. In response, we reviewed data from a 2021 study in which the sample was intentionally balanced by cannabis use status (33% current/past-30-day consumers, 32% non-current lifetime consumers, 35% never

consumers) and noted that the natural fall of political philosophy was fairly well distributed (38% liberal, 36% moderate, 21% conservative, 8% another political philosophy; Allen et al., 2023). Thus, we theorized that ensuring good distribution on political philosophy would yield a range of cannabis use experiences.

We operationalized our diversity priorities using data collection goals. Our data collection goals for political philosophy were 33% “very” or “somewhat conservative,” 33% “moderate (neither conservative nor liberal),” and 33% “very” or “somewhat liberal.” Our goals for race were “at least 20% Black or African American,” and “no more than 40% white.” Our goal for ethnicity was “at least 30% Hispanic, Latino/a, Latinx, Latine.” Our goal for gender identity was “no more than 55% identifying as cisgender women.” We monitored data collection daily and amended the screener programming to close or open the survey to specific populations to meet these goals, as well as our overall goal of 400 completes. We were not able to meet all of our goals. Sample characteristics are shown in Table 1.

Table 1. *Unweighted Study Sample, Overall and by Condition*

	Overall (<i>n</i> = 404)	Not Exposed Condition (<i>n</i> = 203)	Exposed Condition (<i>n</i> = 201)	<i>p</i> -Value
Age				
Mean	48 years	44 years	52 years	.0000
18-34	30.5%	27.5%	24.4%	.1659
35-54	44.8%	36.4%	27.9%	.0004
55+	24.6%	36.1%	47.8%	.0000
Race*				
American Indian/Alaska Native	12.4%	16.7%	8.0%	.0071
Asian	12.1%	14.3%	10.0%	.1825
Black or African American	29.5%	33.5%	25.4%	.0735
Native Hawaiian	2.7%	3.9%	1.5%	.1304
White	45.0%	31.5%	58.7%	.0000
Multiracial or Another Race	9.4%	13.8%	5.0%	.0023
Are you Hispanic, Latino/a, Latinx, Latine?				
Yes	13.9%	16.7%	10.9%	.0916
Gender identity				
Woman	49.5%	44.3%	54.7%	.0368
Man	49.0%	53.2%	44.8%	.0907
Transgender woman	0.5%	1.0%	0.0%	.1570
Transgender man	0.5%	1.0%	0.0%	.1570
Nonbinary	0.0%	0.0%	0.0%	.
Genderqueer	0.0%	0.0%	0.0%	.
Genderfluid	0.0%	0.0%	0.0%	.
Questioning	0.2%	0.0%	0.5%	.3179
An identity not listed here	0.2%	0.5%	0.0%	.3179
I don't know what this question is asking	0.0%	0.0%	0.0%	.
Prefer not to answer	0.0%	0.0%	0.0%	.
How would you describe your political philosophy?				
Very conservative	11.6%	10.8%	12.4%	.6171
Somewhat conservative	18.3%	17.7%	18.9%	.7616
Moderate	35.4%	37.9%	32.8%	.2853
Somewhat liberal	19.6%	17.2%	21.9%	.2400
Very liberal	12.9%	12.3%	13.4%	.7382
None of the above	2.2%	3.9%	0.5%	.0186

Note. *Percentages add to more than 100% because we provided a “select all that apply” option.

The Media Campaign

The *Parabola Campaign* is a media campaign created by Parabola Center for Law and Policy (Parabola Center). The goal of the campaign is to advance Parabola Center's mission by providing everyone with the education, access, and expertise to support cannabis legalization policies that put people and small businesses first. The campaign consists of 22 videos featuring excerpts from interviews with cannabis policy experts. The interviews were conducted at the Second Expert Forum on Global Justice in Emerging Cannabis Markets, in Prague, the Czech Republic, in May 2023, and the Federal Cannabis Policy Crash Course, in Boston, Massachusetts, in June 2023. The interviews touch on themes related to international drug policy, including the undermining of Indigenous knowledge, the harmful role of U.S. drug policy on drug laws across the globe, and the use of drug prohibition as a tool to oppress Black and Latine communities. They highlighted the role of corporations in targeting and exploiting historically marginalized people to further their own power and profit.

This study evaluates receptivity to and efficacy of six of the videos from the *Parabola Campaign*. The experts featured in these videos are leaders of the organizations Drug Policy Alliance (New York, U.S.A.); Marijuana Justice (Virginia, U.S.A.); Simply Pure Dispensary (Colorado, U.S.A.); Umzimvubu Farmers Support Network (South Africa); International Center for Ethnobotanical Education, Research, and Service (ICEERS; Catalonia, Spain); and Transform Drug Policy Foundation (United Kingdom). Links to the videos used in the study can be found at <https://www.youtube.com/@ParabolaCenter>. Full transcripts of the videos are provided in Appendix 1.

Measures

The survey included measures to assess participants' reactions to the videos, beliefs and attitudes about cannabis, and participant demographics. The items in each domain are described below.

Reactions to campaign videos. We measured participants' receptivity to the videos by asking how much participants agreed or disagreed with

the following statements: "This video grabbed my attention"; "This video is informative"; "This video is powerful"; "This video is meaningful to me"; "This video is convincing"; and "This video is worth remembering." Response options took the form of a 5-point scale ranging from "strongly disagree" to "strongly agree." This is an established measure of receptivity, also called advertising "perceived effectiveness" or "PE" which has been associated with subsequent belief and behavior change (Davis et al., 2017; Davis et al., 2012; Duke et al., 2016).

For each video, we asked study participants if they would like, share, or comment on it if they saw the video on social media. We also asked if they would watch a 30-minute version of each video. Response options were "definitely yes," "probably yes," "probably not," and "definitely not." Unless the participant indicated that they would "definitely not" share or comment on a video we followed up with open-ended questions asking, "If you shared this on social media, who would you share it with?" and "If you commented on this on social media, what would you say?"

Beliefs about cannabis policy. We measured participant endorsement of 34 campaign-related beliefs about cannabis policy. Twelve beliefs corresponded to the main messages of the videos. Twenty-two beliefs corresponded to other messages conveyed by the Parabola Campaign. These beliefs fell into three domains: "Who Should Benefit from Cannabis Legalization?" (11 items); "What Do People Value in Cannabis Policy?" (5 items); and "Who Do People Trust to Create Good Cannabis Policy?" (6 items). The individual belief measures can be found in Tables 2 and 3. Response options for all belief measures took the form of a five-point scale ranging from "strongly disagree" to "strongly agree." Respondents also had the option to respond, "I don't know."

Demographic variables. The first questions in the study screener were age and state. Later in the screener, we asked individuals to provide their birthdate and zip code. We screened out individuals for whom age/birthdate and state/zip code data did not correspond.

We measured race by asking, "What is your race? Select all that apply." Response options were "American Indian or Alaska Native"; "Asian"; "Black or African American"; "Native Hawaiian or Other Pacific Islander"; "White"; and "Another race, please specify." We measured ethnicity by

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asking, “Are you Hispanic, Latino/a, Latinx, Latine?” Response options were “yes” and “no.”

Our measure of gender identity was, “Which best describes your gender identity? Select all that apply.” Response options were “Woman”; “Man”; “Transgender woman”; “Transgender man”; “Nonbinary”; “Genderqueer”; “Genderfluid”; “Questioning”; “An identity not listed here, please

describe”; “I don’t know what this question is asking”; and “Prefer not to answer.”

We also asked, “How would you describe your political philosophy?” Response options were “very conservative”; “somewhat conservative”; “moderate—neither conservative nor liberal”; “somewhat liberal”; “very liberal”; and “additional category, please specify.”

Table 2. *Mean Agreement with the Main Messages of the Parabola Campaign Videos, by Condition*

	Not Exposed Condition (<i>n</i> = 203)	Exposed Condition (<i>n</i> = 201)	<i>p</i> -Value
I support a cannabis market that puts the public good first and private profit second. [Steve]	79.9%	79.3%	.8969
The United States and other countries have a lot to learn from one another on cannabis policy. [Oscar]	77.3%	81.4%	.3600
Indigenous knowledge about cannabis deserves attention and respect. [Philasande]	71.2%	75.4%	.3905
I’d like to see a regenerative, sustainable, joyful econ around cannabis. [Kassandra]	71.2%	73.2%	.6814
It’s important that cannabis legalization create space for small business and communities of color. [Wanda]	61.0%	74.0%	.0093
Cannabis knowledge has been passed down over generations. [Philasande]	65.9%	69.0%	.5470
Co-operative models based on community need and support are important for cannabis policy. [Chelsea]	59.2%	72.3%	.0107
I support a cannabis economy that emphasizes sharing. [Kassandra]	62.8%	67.4%	.3836
It’s important to prevent alcohol and tobacco companies from moving into cannabis. [Steve]	62.6%	66.5%	.4415
Everyone will benefit from including Southern voices in cannabis policy. [Chelsea]	46.2%	59.1%	.0162
Cannabis models driven by profit create the same injustices as prohibition. [Oscar]	41.2%	58.9%	.0010
Cannabis companies should be led by communities harmed by drug war. [Wanda]	28.0%	43.3%	.0026

Table 3. *Mean Agreement* with Supporting Parabola Campaign Messages, by Condition*

	Not Exposed Condition (<i>n</i> = 203)	Exposed Condition (<i>n</i> = 201)	<i>p</i> -Value
Who Should Benefit from Cannabis Legalization?			
People who use marijuana as medicine	85.6%	88.1%	.5056
Workers in the cannabis industry	76.6%	73.7%	.5538
People who use marijuana for pleasure	62.3%	65.7%	.5031
Locally-owned businesses	61.8%	65.8%	.4453
People who have been harmed by past enforcement of marijuana laws	62.5%	63.1%	.9133
Small businesses	58.2%	63.8%	.2939
Everyday people	58.3%	63.3%	.3466
The tobacco industry (<i>disagree</i>)	46.9%	58.0%	.0403
Alcohol companies (<i>disagree</i>)	48.2%	67.0%	.0004
Pharmaceutical companies (<i>disagree</i>)	28.5%	46.1%	.0007
Large corporations (<i>disagree</i>)	40.1%	55.7%	.0039
Who do People Trust to Create Good Cannabis Policy?			
People with lived experience	68.3%	70.0%	.7405
People who use marijuana	57.7%	62.1%	.4102
People who are working for social equity	56.6%	62.4%	.2709
Tobacco industry executives (<i>disagree</i>)	63.6%	68.7%	.3234
Alcohol company executives (<i>disagree</i>)	64.6%	68.0%	.5147
Pharmaceutical company executives (<i>disagree</i>)	48.4%	52.4%	.0392
What do People Value in Cannabis Policy?			
Social equity	71.4%	74.4%	.5204
People having access to cannabis	69.6%	70.0%	.9382
Ending marijuana arrests	64.7%	67.1%	.6406
Creating a sharing community	53.1%	70.2%	.0009
Preserving marijuana culture	47.0%	51.8%	.3764

Note. *Estimates reflect the combined proportion of respondents who “strongly agreed” or “agreed,” with the exception of the seven cases noted, which reflect the proportion who “strongly disagreed” or “disagreed.”

Analysis

We weighted the data to force the distributions of the Exposed Condition sample and the Not Exposed Condition sample to exactly equal the distribution of all respondents, and therefore, equal each other. Weighting the study data was important because there were statistically significant differences by condition in three demographic variables known to be associated with study outcomes: age, gender identity, and race. This occurred because we used true randomization of assignment to condition and also screened out populations as they exceeded our data collection goals. The Exposed Condition sample was older and had a higher proportion of women and white people compared to the Not Exposed Condition sample (shown in Table 1). Because these characteristics are associated with less support for legal retail cannabis (Pew Research Center, 2015; Schaeffer, 2023) and because the videos all build on the assumption of cannabis legalization, we theorized that the experiment may be biased toward a null finding. The weights control for differences between the two conditions on age category, race, and gender identity.

We used imputation to replace 17 missing values on variables used in the calibration adjustment. We did this using a hot deck imputation procedure that randomizes the missing values to one of the categories with a probability proportional to each level of distribution in the corresponding sample.

We used F -tests (adjusted Wald tests) to conduct significance testing on mean agreement with each outcome, based on a 5-point scale. To streamline the presentation of our findings, we combined the “strongly agree” and “agree” responses, and the “strongly disagree” and “disagree” responses. We also combined the “neutral” and “I don’t know” responses on the principle that both responses represent an opportunity for public education. Analyses were conducted using Stata version 16 (StataCorp, 2025).

RESULTS

Sample Characteristics

We surveyed 404 adults aged 21 and older from across the United States. Approximately half of the study participants ($n=201$) were assigned to the Exposed Condition. The other half ($n=203$) were assigned to the Not Exposed Condition (Table 1).

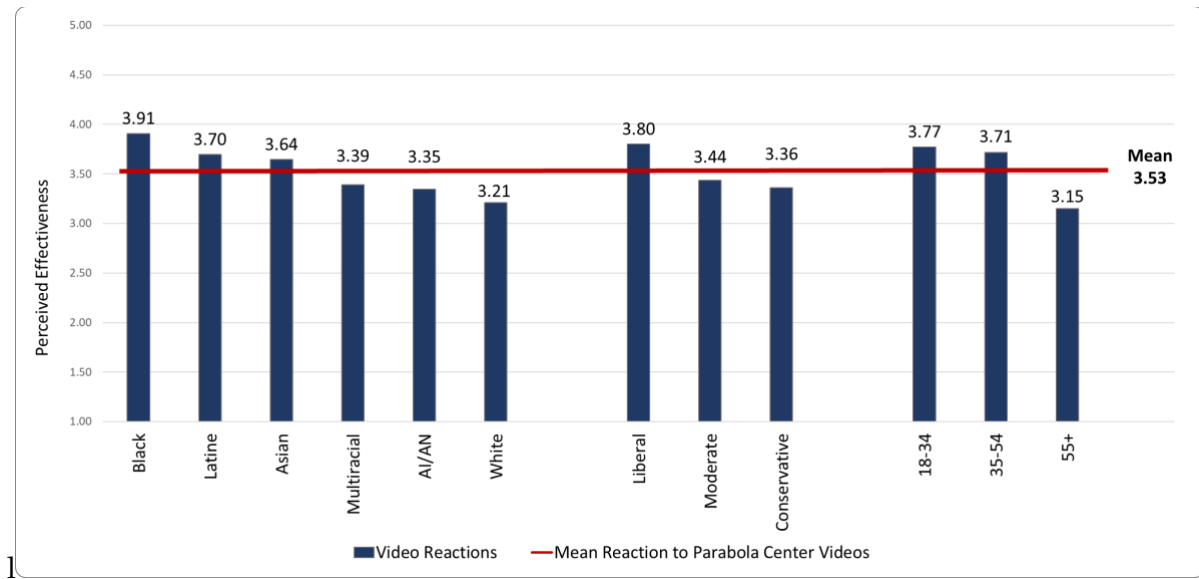
The mean age of the overall sample was 48 years. The racial makeup of the overall sample was 12.4% American Indian/Alaska Native, 12.1% Asian, 29.5% Black, 2.7% Native Hawaiian, 45.0% white, and 9.4% multiracial or another racial identity (Table 1). In the overall sample, 13.9% identified as Hispanic, Latino/a, Latinx, or Latine. By gender identity, the overall sample was 49.5% women and 0.5% transgender women, 49.0% men and 0.5% transgender men, and 0.2% questioning or an identity not listed. No participants described themselves as nonbinary, genderqueer, or genderfluid. By political philosophy, the overall sample was 11.6% very conservative, 18.3% somewhat conservative, 35.4% moderate, 19.6% somewhat liberal, 12.9% very liberal, and 2.2% none of the above.

As noted earlier, the demographic characteristics of the two conditions differed statistically significantly on variables known to be associated with opinions about cannabis legalization. Specifically, the Exposed Condition sample was older (age 52 vs. 44), had a higher proportion of women (55% vs. 44%), and had a higher proportion of white people (59% vs. 32%), compared to the Not Exposed Condition sample (all at least $p < .05$, as shown in Table 1).

Reactions to Campaign Videos

The mean PE score for the set of six *Parabola Campaign* videos was 3.53 (Figure 2). The videos generated the highest PE scores among respondents who are Black (3.91), liberal (3.80), and in the 18-34 age range (3.77). The lowest scores were among people who are white (3.21), conservative (3.36), and in the 55 and older age range (3.15). Although a target level of advertising PE has not been established in the literature, studies show that PE scores of 3.47 or greater have been associated with actual advertising effectiveness among adults (Davis et al., 2017).

Figure 2. *Parabola Campaign Video Reactions by Race, Ethnicity, Political Philosophy, and Age**



Note. *The label Black includes people who described themselves as Black or African American. The label Latine includes people who described themselves as Hispanic, Latino/a, Latinx, or Latine. The label Multiracial includes people who described themselves Multiracial or another race. The label AI/AN signifies those who described themselves American Indian or Alaska Native.

The characteristic that best described the videos was “informative,” endorsed by 68% of study participants (data not shown). In addition, more than half of participants described the videos as “convincing” and “attention grabbing” (both 58%), “worth remembering” (57%), and “powerful” (54%). More than half (59%) described the videos as “meaningful to me” (data not shown).

A substantial proportion of study participants reported that, if they saw the videos on social media, they would like them (63%), share them (49%), or comment on them (44%). Nearly half of the participants (48%) said they would watch a 30-minute version of the video.

Overview of Experimental Findings

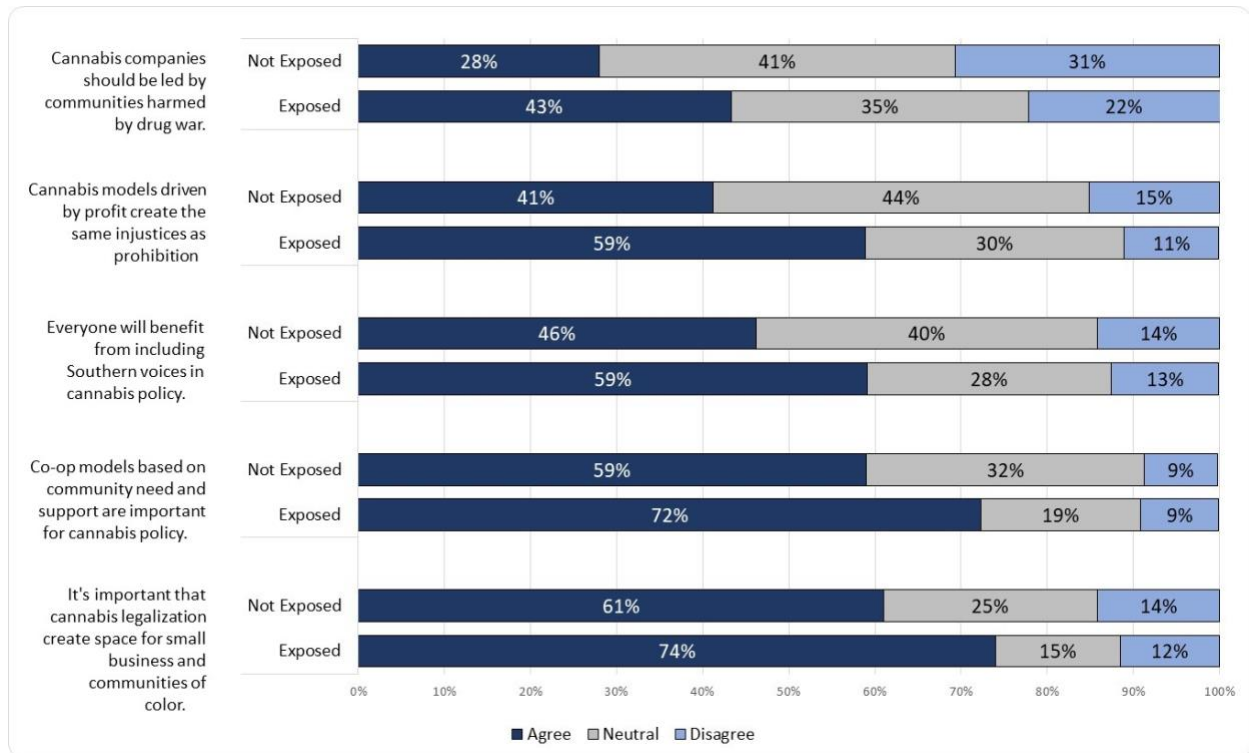
About one-third of the beliefs we assessed (11 out of 34) differed statistically significantly at $p < .05$, or greater, across experimental conditions. In each case, we observed greater endorsement of beliefs promoted by *Parabola Campaign* videos in the Exposed Condition relative to the Not Exposed Condition (Tables 2 and 3). Additionally, we observe a pattern of effects such that 32 of the 34 beliefs we evaluated were more greatly endorsed (though not always statistically significantly),

consistent with *Parabola Campaign* messaging among those in the Exposed Condition relative to the Not Exposed Condition (Tables 2 and 3). Statistically significant findings are described in greater detail below.

Endorsement of the Main Messages of the Videos

We measured endorsement of 12 beliefs that correspond to the main messages of the *Parabola Campaign* videos (Table 3 and Appendix 1). For five of these beliefs, we observed statistically significantly greater agreement in the Exposed Condition relative to the Not Exposed Condition (Figure 3). These beliefs are “It is important that cannabis legalization create space for small businesses and communities of color” ($p < .01$); “Co-operative models based on community need and support are important for cannabis policy” ($p < .05$); “Everyone will benefit from including Southern voices in cannabis policy” ($p < .05$); “Cannabis models driven by profit create the same injustices as prohibition” ($p < .01$); and “Cannabis companies should be led by people from communities that the drug war has harmed” ($p < .01$).

Figure 3. *Endorsement of the Main Messages of Parabola Campaign Videos*

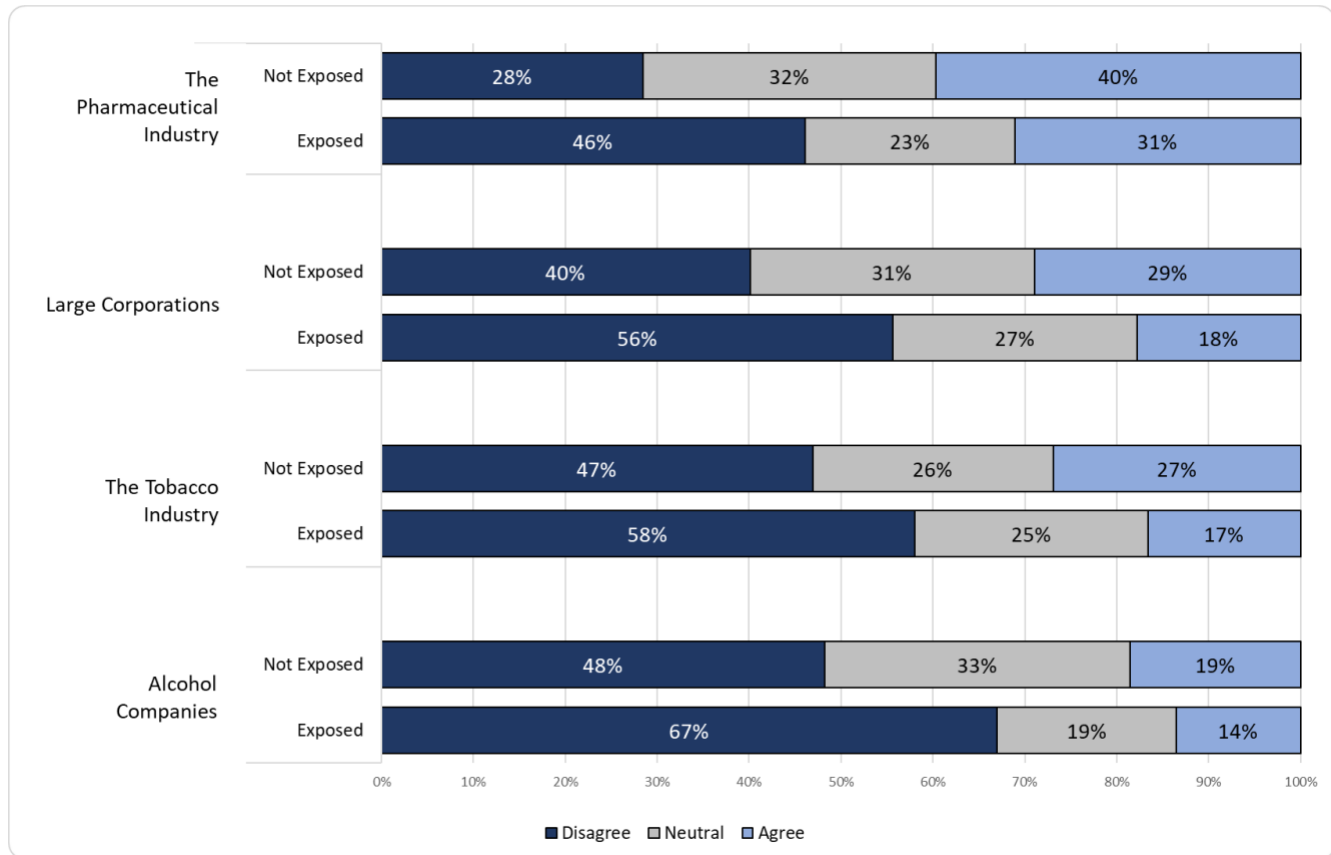


Who Should Benefit from Cannabis Legalization?

We measured endorsement of 11 beliefs about which groups should benefit from cannabis legalization (Table 3). *Parabola Campaign* messaging communicates that seven of the groups should benefit from legalization, including people who use marijuana, people who have been harmed by past enforcement of marijuana laws, and locally-owned businesses. The campaign communicates that the following groups should *not* benefit from legalization: the tobacco industry,

alcohol companies, pharmaceutical companies, and large corporations. Endorsement of *Parabola Campaign* messaging, therefore, took the form of agreement with the first seven items in Table 3, and disagreement with the last four items. We document statistically significantly greater disagreement that the tobacco industry ($p < .05$), alcohol companies ($p < .001$), pharmaceutical companies ($p < .001$), and large corporations ($p < .05$) should benefit from cannabis legalization in the Exposed Condition, relative to the Not Exposed Condition (Figure 4).

Figure 4. “I think cannabis legalization should benefit...” by Study Condition



Who do People Trust to Create Good Cannabis Policy?

We measured endorsement of 6 beliefs about which entities study participants trust to create good cannabis policy (Table 3). The *Parabola Campaign* advocates trust for three of the groups: people who use marijuana, people with lived experience, and people who are working for social equity. The campaign asserts that the following groups should not be trusted to create cannabis policy: tobacco industry executives, alcohol company executives, and pharmaceutical company executives. Participants in the Exposed Condition reported statistically significantly greater disagreement that pharmaceutical company executives would create good cannabis policy relative to those in the Not Exposed Condition ($p < .05$).

What do People Value in Cannabis Policy?

We asked study participants five questions about what they value in cannabis policy (Table

3). Participants in the Exposed Condition reported statistically significantly greater agreement that they care about “creating a sharing community,” relative to participants in the Not Exposed Condition ($p < .001$).

DISCUSSION

This study shows that public education can be used to promote equity-focused cannabis policy, by raising awareness of corporate influence, promoting community-centered regulatory models, and building support for an equitable approach to federal legalization. Specifically, we find that after being exposed to brief videos featuring a diverse group of cannabis policy experts, study participants were more supportive of cannabis policies that create space for small businesses and communities of color; were more supportive of cannabis models like co-ops, that create a sharing community and are not profit-driven; and were less interested in seeing legalization benefit the tobacco industry, alcohol

companies, pharmaceutical companies, and other large corporations.

Additionally, we found that receptivity to the videos exceeded the threshold associated with actual advertising effectiveness overall, and among people who identify as Black; Latine/Hispanic; Asian; Native Hawaiian or Other Pacific Islander; liberal; or age 21 to 54. The videos were least well received among white people, conservatives, and people 55 years of age and older. It is worth noting that the PE score for people who identify as political moderates was more similar to that of conservatives than liberals.

Taken together, these findings indicate that the set of videos we tested in this study have the potential to change population-level beliefs about cannabis policy. Translating that potential into reality is primarily a matter of funding. When public education campaigns are ineffective, a common reason is insufficient funding, resulting in too little population-level campaign exposure (Hornik, 2002). As noted earlier, the best guidance on the amount of exposure needed for effective public education campaigns is from the CDC's Best Practices for Comprehensive Tobacco Control Programs. Best Practices recommends that public education campaigns reach at least 75% of the intended audience in each quarter of the year (in other words, consistently) for three to six months to achieve campaign awareness and six to 12 months to achieve belief and attitude change (Centers for Disease Control and Prevention, 2014).

These videos may achieve belief change more rapidly and with less funding than campaigns that seek to change more established beliefs. Cannabis legalization is still an emerging issue in the United States, and many people do not have firm, preexisting beliefs about what cannabis policy should look like. For example, from 25% to 44% of participants in the unexposed study condition said they were "neutral" or "didn't know" if they agreed with the policies promoted through the videos (Figure 3). This represents an opportunity to provide education about models to shape equity-focused drug policy.

Studies show that a characteristic of "promising" public education messages is that the belief they seek to change has "room to move." (Zhao et al., 2024) In other words, the desired belief is not already widely held within

the population of interest. That is the case with the beliefs measured as part of this study, and is consistent with findings from other cannabis policy studies (Allen et al., 2023). Among those who viewed the Parabola Campaign videos, a smaller proportion said they were neutral or didn't know whether they supported the policies. Indeed, we see that the proportion of those who are neutral or didn't know is smaller for each of the messages shown in Figures 3 and 4, with the exception of the message about the tobacco industry, which is about the same in the two conditions, perhaps because attitudes toward the tobacco industry are somewhat more established.

Limitations

This study has a number of limitations. First, we observe statistically significant differences by condition in three demographic variables known to be associated with study outcomes: age, gender identity, and race. Specifically, the Exposed Condition sample was older and had a higher proportion of women and white people compared to the Not Exposed Condition sample (Table 1). National data show that older people, women, and white people are less supportive of legal retail cannabis relative to their peers (Pew Research Center, 2015; Schaeffer, 2023). As a result, the Exposed Condition sample likely had more anti-cannabis attitudes and beliefs at the outset of the study relative to the Not Exposed Condition sample. Thus, it is possible that the experiment was biased toward a null finding. We addressed this limitation by weighting the data to force the distributions of the Exposed Condition sample and the Not Exposed Condition sample to exactly equal the distribution of all respondents, and therefore, equal each other.

Second, this study is based on a non-representative sample. We intentionally developed a sample that was 30% Black and would have liked to include a larger sample of people who identify as Hispanic/Latine. We prioritize the perspectives of Black and Latine people in research that may shape the future of cannabis policy because Black and Latine people have been, and still are, disproportionately harmed by the War on Drugs (Edwards et al., 2020). As noted, the weights are designed to produce accurate results for the experiment. They are not designed to produce estimates that are

representative of adults in the United States. A companion report to this study presents estimates based on data that are weighted to the adult U.S. population. [That report](#) can be found on the Parabola Center website.

Third, we would have liked to ensure that we had a substantial proportion of cannabis consumers in the study by screening on cannabis use. Because cannabis consumers have been, and continue to be, stigmatized and criminalized for their cannabis use, we think it is important to include their perspectives in research that may influence cannabis policy. Unfortunately, as noted earlier, the data collection vendor we worked with, Dynata, would not permit us to ask about cannabis use, since it is illegal at the national level. This is one example of the many ways national cannabis laws discourage and diminish cannabis research. However, based on data from an earlier study, we theorized that ensuring good distribution on political philosophy would yield a range of cannabis use experiences, including a substantial proportion of cannabis consumers (Allen et al., 2023).

Fourth, we were disappointed that the study sample did not include a meaningful number of people who identify as transgender, nonbinary, genderqueer, genderfluid, or questioning. In this regard, the sample differs from others we have recruited recently for other studies. However, we recruited for those studies using social media advertisements rather than using a panel vendor. In any case, failing to include people who identify as transgender, nonbinary, genderqueer, genderfluid, and questioning represents a loss of important insights for our work to examine possibilities for shaping drug policy.

Fifth, study participants were not permitted to skip the videos embedded in this survey. Although we cannot be sure participants watched or attended to the videos, our methods almost certainly produced greater exposure than one would naturally find in response to a media campaign. Additionally, we measured the effects of the media immediately following exposure to the videos. Thus, we do not know whether the effects we have documented on beliefs are enduring.

Conclusion

This study suggests that public education can be a powerful tool to promote equity-focused cannabis policy by raising awareness of corporate influence, promoting community-centered regulatory models, and building support for an equitable approach to federal legalization.

This moment in time, in which federal cannabis policy is being shaped prior to legalization, presents a fleeting opportunity to reimagine the U.S. approach to cannabis and begin to redress the devastating impacts of the War on Drugs. The opportunity is fleeting because corporate interests are already working to create cannabis policy that will maintain the inequitable and exploitative dynamics that have long characterized U.S. drug policy, with power simply shifting from government to corporations. The research presented here indicates that this is not what the people of the United States want, particularly when they learn about alternative cannabis legalization models from cannabis policy experts.

REFERENCES

- Acker J, B. P., Arkin E, Leviton L, Parsons J, Hobor G. (2018, December 01). *Mass incarceration threatens health equity in America*.
<https://www.rwjf.org/en/library/research/2019/01/mass-incarceration-threatens-health-equity-in-america.html>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
[https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Alang, S., McAlpine, D., McCreedy, E., & Hardeman, R. (2017). Police brutality and Black health: Setting the agenda for public health scholars. *American Journal of Public Health*, 107(5), 662-665.
<https://doi.org/10.2105/AJPH.2017.303691>
- Alexander, M. (2012). *The new Jim Crow. Mass incarceration in the age of colorblindness*. The New Press.
- Allen, J. A., Lee, Y. O., Woodlea, R., Malo, V. F., & Zitney, L. V. (2023). Public education can be used to increase support for equity in cannabis policy. *Cannabis*, 6(2), 76-88.
<https://doi.org/10.26828/cannabis/2023/00014>

- Barry, R. A., Hiilamo, H., & Glantz, S. A. (2014). Waiting for the opportune moment: The tobacco industry and marijuana legalization. *The Milbank Quarterly*, 92(2), 207-242. <https://onlinelibrary.wiley.com/doi/10.1111/1468-0009.12055>
- Centers for Disease Control and Prevention. (2014). *Best practices for comprehensive tobacco control programs — 2014*. <https://www.cdc.gov/tobacco/php/state-and-community-work/guides-for-states.html>
- Centers for Disease Control and Prevention. (2024, May 15). *Unfair and unjust practices and conditions harm African American people and drive health disparities*. <https://www.cdc.gov/tobacco-health-equity/collection/african-american-unfair-and-unjust.html#:~:text=Some%20U.S.%20historical%20policies%20and,the%20sale%20of%20commercial%20tobacco>
- Coalition for Cannabis Policy Education and Regulation. *Who we are*. (2025). <https://www.cpear.org/who-we-are/>
- Commonwealth of Massachusetts Cannabis Control Commission. (2024). *Social equity program*. <https://masscannabiscontrol.com/equity/>
- Cooper, H. L. (2015). War on Drugs Policing and Police Brutality. *Substance Use & Misuse*, 50(8-9), 1188-1194. <https://www.tandfonline.com/doi/full/10.3109/10826084.2015.1007669>
- Daniels, C., Aluso, A., Burke-Shyne, N., Koram, K., Rajagopalan, S., Robinson, I., Shelly, S., Shirley-Beavan, S., Tandon, T. (2021). Decolonizing drug policy. *Harm Reduction Journal*, 18(1), 120. <https://doi.org/10.1186/s12954-021-00564-7>
- Davis, K. C., Duke, J., Shafer, P., Patel, D., Rodes, R., & Beistle, D. (2017). Perceived effectiveness of antismoking ads and association with quit attempts among smokers: Evidence from the Tips From Former Smokers Campaign. *Health Communication*, 32(8), 931-938. <https://www.tandfonline.com/doi/full/10.1080/10410236.2016.1196413>
- Davis, K. C., Nonnemaker, J., Duke, J., & Farrelly, M. C. (2013). Perceived effectiveness of cessation advertisements: the importance of audience reactions and practical implications for media campaign planning. *Health Communication*, 28(5), 461-472. <https://doi.org/10.1080/10410236.2012.696535>
- Drug Policy Alliance, & Harm Reduction International. (2024, December). *A world of harm: How U.S. taxpayers fund the global war on drugs over evidence-based health responses*. https://drugpolicy.org/wp-content/uploads/2024/11/A-World-of-Harm-Report-FINAL-11_25.pdf
- Duke, J. C., Allen, J. A., Eggers, M. E., Nonnemaker, J., & Farrelly, M. C. (2016). Exploring differences in youth perceptions of the effectiveness of electronic cigarette television advertisements. *Nicotine & Tobacco Research*, 18(5), 1382-1386. <https://academic.oup.com/ntr/article-abstract/18/5/1382/2511789?redirectedFrom=fulltext&login=false>
- Edwards, E., Greytak, E., Madubonwu, B., Sanchez, T., Beiers, S., Resing, C., . . . Galai, S. (2020). *A tale of two countries: Racially targeted arrests in the era of marijuana reform*. American Civil Liberties Union. <https://www.aclu.org/report/tale-two-countries-racially-targeted-arrests-era-marijuana-reform>
- Equal Justice Initiative. (2016, March 22). *Nixon adviser admits War on Drugs was designed to criminalize Black people*. <https://eji.org/news/nixon-war-on-drugs-designed-to-criminalize-black-people/>
- Firth, C. L., Maher, J. E., Dilley, J. A., Darnell, A., & Lovrich, N. P. (2019). Did marijuana legalization in Washington State reduce racial disparities in adult marijuana arrests? *Substance Use & Misuse*, 54(9), 1582-1587. <https://www.tandfonline.com/doi/full/10.1080/10826084.2019.1593007>
- Fishbein, M. (1967). A consideration of beliefs and their role in attitude measurement. In M. Fishbein (Ed.), *Readings in attitude theory and measurement* (pp. 257-266). Wiley.
- Gunadi, C., & Shi, Y. (2022). association of recreational cannabis legalization with cannabis possession arrest rates in the US. *JAMA Network Open*, 5(12), e2244922. doi:10.1001/jamanetworkopen.2022.44922
- Hornik, R. (2002). *Public health communication: Evidence for behavior change*. Lawrence Erlbaum Associates.

- Hornik, R., & Woolf, K. (1999). Using cross-sectional surveys to plan message strategies. *Social Marketing Quarterly*, 5(1), 34–41. <https://journals.sagepub.com/doi/10.1080/15245004.1999.9961044>
- Illinois Department of Commerce and Economic Opportunity. (2024). *Cannabis social equity program*. <https://dceo.illinois.gov/oe3/cannabisequity.html>
- Lee, S., Ling, P. M., & Glantz, S. A. (2012). The vector of the tobacco epidemic: tobacco industry practices in low and middle-income countries. *Cancer Causes & Control*, 23, 117–129. <https://doi.org/10.1007/s10552-012-9914-0>
- Mueller, B., Gebeloff, R., & Chinoy, S. (2018, May 13). Surest way to face marijuana charges in New York: Be Black or Hispanic. *The New York Times*. <https://www.nytimes.com/2018/05/13/nyregion/marijuana-arrests-nyc-race.html>
- National Academies of Sciences, Engineering, and Medicine. (2024). *Cannabis policy impacts public health and health equity*. The National Academies Press. <https://doi.org/10.17226/27766>
- National Commission on Marihuana and Drug Abuse. (1972). *Marihuana: A signal of misunderstanding. First report of the National Commission on Marihuana and Drug Abuse*. U.S. Government Printing Office. <https://archive.org/details/marihuanasignalo00unit/page/n1/mode/2up?q=%22has+found+no+evidence%22>
- New York State Office of Cannabis Management. (2024, March). *Adult-use social & economic equity applicant overview*. <https://cannabis.ny.gov/system/files/document/s/2024/03/ocm-seeapplicants.pdf>
- OpenSecrets. (2025). *Marijuana lobbying*. <https://www.opensecrets.org/industries/lobbying?cycle=2024&ind=G2860>
- Pew Research Center. (2015, April 14). *In debate over legalizing marijuana, disagreement over drug's dangers: In their own words—Supporters and opponents of legalization*. <https://www.pewresearch.org/politics/2015/04/14/in-debate-over-legalizing-marijuana-disagreement-over-drugs-dangers/>
- Pew Research Center. (2022, November 22). *Americans overwhelmingly say marijuana should be legal for medical or recreational use*. <https://www.pewresearch.org/short-reads/2022/11/22/americans-overwhelmingly-say-marijuana-should-be-legal-for-medical-or-recreational-use/>
- Schaeffer, K. (2023, April 13). *7 facts about Americans and marijuana*. Pew Research Center. <https://www.pewresearch.org/short-reads/2023/04/13/facts-about-marijuana/>
- StataCorp. 2025. Stata Statistical Software: Release 19. College Station, TX: StataCorp LLC.
- Stowe, M. J., Gatonye, R., Maharjan, I., Kehinde, S., Arya, S., Valderrabano, J. H., . . . Fast, D. (2024). The war on drugs is a war on us: Young people who use drugs and the fight for harm reduction in the Global South. *Harm Reduction Journal*, 21(1), 43. <https://doi.org/10.1186/s12954-023-00914-7>
- Substance Abuse and Mental Health Services Administration. (2020). *2019 NSDUH detailed tables, Table 1.25B*. U.S. Department of Health and Human Services. <https://www.samhsa.gov/data/report/2019-nsduh-detailed-tables>
- The Public Science Project & Drug Policy Alliance. (2021, March). *Inequitable marijuana criminalization, COVID-19, and socioeconomic disparities: The case for community reinvestment in New York*. https://1cf110.a2cdn1.secureserver.net/wp-content/uploads/2021/03/DPA_PSP_Marijuana_Disparities_COVID_3.16.2021.pdf
- New Jersey Cannabis Regulatory, Enforcement Assistance, and Marketplace Modernization Act. (2021). *Recreational cannabis: Frequently asked questions*. <https://www.nj.gov/cannabis/resources/faqs/recreational/>
- United States Drug Enforcement Administration. (2024). The Controlled Substances Act. <https://www.dea.gov/drug-information/csa>
- Unknown. (1983). New product ideas [Internal industry document]. Philip Morris Records; Master Settlement Agreement. <https://www.industrydocuments.ucsf.edu/docs/jzjx0112>
- WGBH Educational Foundation. (2024). *Marijuana timeline*. <https://www.pbs.org/wgbh/pages/frontline/shows/dope/etc/cron.html>

- Zhao, X., Delahanty, J. C., Duke, J. C., MacMonegle, A. J., Smith, A. A., Allen, J. A., & Nonnemaker, J. (2020). Perceived message effectiveness and campaign-targeted beliefs: Evidence of reciprocal effects in youth tobacco prevention. *Health Communication, 36*(11), 1–10.
<https://doi.org/10.1080/10410236.2020.1839202>
- Zhao, X., Malterud, A., Curry, L., Malo, V., MacMonegle, A., Nonnemaker, J., & Allen, J. (2024). Promising themes for electronic cigarette prevention campaigns for youth and young adults. *Nicotine & Tobacco Research, 26*(8), 999–10006.
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