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Attitudes in 2020 Towards Medical and Recreational Marijuana in Prohibitionist Nebraska

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Abstract

Despite considerable change in the legal status of marijuana in the United States in the 21st century, the state of Nebraska has become an outlier in maintaining a complete prohibition on the substance. We estimate overall public support for medical and recreational marijuana in the state of Nebraska. Our data comes from the 2020 Nebraska Annual Social Indicators Survey, an address-based sample of Nebraskan adults. We asked a question from the Pew Research Center if participants support legal marijuana for medical AND recreational use, medical use only, or if they think it should not be legal. We estimate that 83.18% of Nebraskans support medical marijuana legalization. There is less consistent support for legal recreational use than medical use alone. There are also associations between support preferences and age, political party, gender, and the amount of stigma a participant reports in their community towards people that use various substances.

Keywords

legal marijuana, Nebraska, public opinion, stigma

Introduction

Nebraska remains one of the few states to maintain a complete prohibition on medical and recreational marijuana. As of April 2021, 18 states (AK, AZ, CA, CO, IL, MA, MD, ME, MI, MT, NJ, NM, NV, NY, OR, VA, VT, and WA) and the District of Columbia have approved legal recreational and medical use of marijuana. An additional 18 states legalized medical use of marijuana, but continue to prohibit recreational use. Of the remaining 15 states, 12 allow for some products derived from marijuana but with greatly reduced or no purported psychoactive properties. This leaves Idaho, Kansas and Nebraska as the only remaining three states with complete prohibition (UNODC 2021).

The changing legal landscape for marijuana in the United States reflects large changes in public opinion about the substance itself. Gallup reported in 2020 that 68% of Americans think marijuana should be legal, a vast increase over the 12% that supported it when Gallup first asked the question in 1969 (Brenan 2020). The General Social Survey (GSS) reported that 61% of Americans supported legal marijuana in 2018 and more than 50% of Americans have supported legal marijuana since 2014 (General Social Survey 2020). Further, the majority of states that

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have legalized recreational marijuana have seen ballot measures and direct public vote campaigns push the legalization change (Beltz, Mosher, & Schwartz 2020). The Nebraska Legislature continues to oppose the passage of any medical laws, paving the way for a ballot initiative for medical marijuana and likely a future recreational initiative (Schulte 2021). In this paper, we examine public support for recreational and medical marijuana among Nebraskan adults with specific attention to intrastate, political, and stigma differences.

Nebraska first prohibited marijuana for recreational use in 1927 with HR74 (44th Session 1927). This law made it illegal to import, possess, or cultivate marijuana, but provided exceptions for medical and pharmaceutical use. Nebraska was one of several states in the west and southwest to prohibit marijuana before the federal prohibition in 1937. The first states were California and Utah in 1915, followed by Colorado in 1917, Texas in 1919, Iowa in 1921, and then New Mexico, Arkansas, Nevada, Oregon, and Washington in 1923. In 1927, Idaho, Kansas, Montana, and Nebraska all passed some form of prohibition (Davenport-Hines 2002:240). It is no accident that many of these states were those with higher numbers of migrant workers from Mexico, and that support for marijuana prohibition was often built on racist panics about the threat of Mexican immigrants (Brecher 1972; Davenport-Hines 2002; Musto 1999). Indeed, changing attitudes towards Mexicans at this time were reflected quite clearly by the 1930 US Census which introduced Mexican as a new racial category. Previously, the Census considered anyone from Mexico to be White (Parker et al. 2015). Politicians from the west and plains would continue pressure the federal government to restrict marijuana, leading to the eventual federal prohibition for recreational and medical use with the passing of 1937 Marijuana Tax Act (Musto 1999). Although a revenue act, the 1937 Tax Act was de facto prohibition as it required a tax stamp to import, produce, or sell marijuana. As the tax stamp was not granted, this act led to the end of legal sales of marijuana in the US.

In the years since 1937, the states and the general population have slowly begun to reverse course on their opinions of marijuana and its legality. This change has not been ubiquitous in the United States, with some groups changing their support at higher rates than others. For example, national data from the GSS revealed higher levels of support for legal marijuana in members of the Democratic party than the Republican party (Denham 2019). Members of both parties are increasingly in favor of legalization, but Democrats are changing their minds at a much faster rate than Republicans, especially since 2004 (Denham 2019).

Another common association found in the GSS is that older individuals have lower levels of support for legal marijuana. Schwadel and Ellison (2017) used age-period-cohort models to assed effects from individuals getting older (age), changes over time that effect everyone (period), or differences associated with those born in the same 5 years (cohorts). They found that on average people have less support for legalization as they get older, and there is somewhat higher support for those born in the Baby Boomer cohorts (1945–1964). However, they found that most of the change in attitudes towards marijuana legalization are explained as period effects, meaning there has been a large general shift in opinion since 1990 that is separate from birth cohort and an individual's age (Schwadel & Ellison 2017). Other consistent findings from the GSS include that men were more supportive of legalization than women, and, in some years, differences in support were associated with education and region of the country (Denham 2019; Schnabel & Sevell 2017; Stringer & Maggard 2016).

National studies, such as the GSS or polling from Gallup, provide national estimates of public opinion, but there have been no national changes in marijuana laws. The federal government continues to classify marijuana as a Schedule I controlled substance with no recognized medical use, preventing any legal reform at the federal level. Instead, changes in legality of both medical and recreational use have been among the states.

Spetz et al. (2019) assessed state-level characteristics associated with medical and recreational marijuana laws passing in the US before 2010 and then after. They found that early legalization

was focused in the West and Northeast parts of the country, and after 2010 legalization has been spreading into other portions of the country. States that have maintained prohibition have higher proportions of Evangelical Protestants, fewer immigrants, and Republican controlled legislatures. However, in recent years there has been growing support among Republican controlled states, particularly for medical marijuana laws.

States are themselves not uniform blocks of support or opposition. Beltz et al. (2020) examined county-level differences in percent voting for recreational marijuana in four different ballot measure election cycles: California 2010, Colorado 2012, Washington 2012, and Oregon 2014. Three of these measures would pass, and although California's 2010 measure failed, a different legalization measure would pass in 2016. Beltz et al. found that a higher percentage of men, more Democrats, more people who say they are not Hispanic and White, more college graduates, and more arrests for marijuana possession per 1000 residents in a county, were associated with a higher percentage of the county voting for marijuana legalization. They did not find an association with the rurality of a county (measured with the USDA's Rural Urban Continuum Codes treated as a continuous variable), the percent of religious adherence, or the percent of people over the age of 65 to be associated with support of legalization. These findings are similar to what Collingwood and colleagues (2018) found when surveying voters in Washington before the 2012 election. There they found associations with gender, political party and political ideology, and religious attendance, but not age, describing yourself as White or not, and marital status (Collingwood et al. 2018).

Attitudes on the legality of marijuana depend upon more than just a person's view of the substance alone. What may be more important is how a person thinks about people who use the substance or who they stereotypically think use the substance. People who use drugs are often stigmatized, a process whereby others view their identity as one that is marked and are then treated differently (Goffman 1963). Stigma can change how a person thinks about themselves, how people they know think about them, and even how people think about hypothetical others who may use drugs (Link et al. 2015). The latter is an important link to policy because the stigma and stereotypes around people who use drugs may influence the attitudes of other people towards laws directed specifically at people who use drugs. A systematic review of stigma towards people with substance use disorders found several commonly endorsed stereotypes: that people who use drugs are dangerous and unpredictable, have reduced decision-making capacity, are blameworthy, less receptive to treatment, and are immoral (Yang, Wong, Grivel, & Hasin, 2017). These types of stigma were associated with prohibition laws in the US historically and in contemporary dialogue.

In the past, stigma towards certain group of people have often been used to justify prohibition of a substance, increase social control, or reduce the rights of those associated with a given substance. Firewater Myths are a collection of stigmatic stereotypes about Native Americans an alcohol that were used to both justify alcohol control and governmental control over Native Americans (Coyhis & White 2006). In the late 19th century, a series of prohibitions on smoking opium targeted Chinese immigrants, starting in cities on the west coast and several attempts at federal legislation (Courtwright 2001). Coca and cocaine prohibition in the late 19th and early 20th century incorporated stigma towards Black people in the United States, and would again with perceptions of crack cocaine in the 1980s (Madge 2001). Marijuana prohibition in 1937 was pushed by stigma towards Mexican, Caribbean, and Syrian immigrants, especially at the local and state level (Courtwright 2001; Musto 1999). Historically, there is considerable evidence that how a person who uses drugs is perceived by the public can be tied with support for prohibition, and that different substances often involved different sets of stigma or stereotypes.

More recently, a pilot study with an online convenience sample found that higher levels of stigma towards people who use drugs was associated with less favorable opinions about being unwilling to vote for a president with a history of using drugs, and being more likely to equate

the harms of heroin with the harms of marijuana (Palamar 2013). Even among people who use drugs, stigma and stereotypes about different types of drugs may lead to very different views about policy. A focus group study in Australia with people who inject drugs found stark differences in opinion about policy that changed the legal status and penalties associated with people who use heroin compared to those who use methamphetamine (Lancaster et al. 2015). Zigon (2019) also reported this type of stigma towards people who use stimulants from people who use other drugs from his work with drug user unions in Europe. Although work on stigma around people who use drugs seems to be just beginning—Yang and colleagues (2017) found only 20 studies to review since 1999—measuring stigma is likely an important consideration when assessing attitudes towards drug policy and legal changes. Particularly when a person does not have first-hand experience with a substance, but is familiar with stereotypes and stigma that exist in social settings towards people who use drugs.

Despite considerable change in the legal status of marijuana in the United States in the 21st century, the state of Nebraska has seen very little legislative movement. With no legal allowances for medical or recreational use of marijuana, Nebraska has become an outlier in maintaining a complete prohibition on the substance. However, the legality of marijuana continues to change with ballot initiatives and direct votes, not legislative action. With that in mind, we sought to answer four questions about public support for medical and recreational marijuana in the state of Nebraska.

Q1: What is the state-wide level of support for recreational and medical marijuana in Nebraska among Nebraskan adults?

Q2: Is support for recreational or medical marijuana associated with political party?

Q3: Does support for medical and recreational marijuana vary by intrastate region and rurality of where a person lives?

Q4: What is the association between an individual's perceived community stigma towards people that use marijuana and stigma towards people who use other drugs associated with support for recreational and medical marijuana?

Sample

We use data from the 2020 Nebraska Annual Social Indicators Survey (NASIS) which is paper survey mailed to an address-based sample of Nebraskans who are 19 and older (19 is the age of majority in Nebraska). Address-based samples provide a high level of coverage for the housed population of the United States and lower cost compared to other survey modes (English et al. 2019; Iannacchione 2011; Link et al. 2008; Shook-Sa et al. 2013). The NASIS is an omnibus survey, and researchers can purchase space on the survey, and is run either yearly or twice yearly by the Bureau of Sociological Research (BOSR) at the University of Nebraska-Lincoln. In 2020, the NASIS was sent to sample of 8000 addresses in Nebraska. The sample was stratified by the six Behavioral Health Regions in Nebraska and the two largest cities in Nebraska—Omaha and Lincoln. The eight resulting sampling strata are mutually exclusive and 1000 addresses were selected at random from each strata. A map of these regions and the complete list of counties and ZIP codes used to create these eight strata are listed in the 2020 NASIS methodology report (BOSR 2020).

The 2020 NASIS was fielded between August 4, 2020 and November 20, 2020. All questions and procedures were approved by the IRB and the University of Nebraska-Lincoln. An initial survey packet was sent on July 28, 2020, a reminder postcard was sent on August 5, 2020, and a second survey packet was sent on August 24, 2020. Of the 8000 addresses in the sample, 11% were returned unopened as a postmaster return due to vacancies, or other address ineligible codes. The overall response rate for the 2020 NASIS was 27.7% AAPOR 2016, RR2.

Response rates have been falling for decades (Stedman et al. 2019) and low response rates can introduce considerable bias in a given statistic when the reason for nonresponse is associated with a specific statistic (Groves 2006). However, low response rates are themselves insufficient evidence of bias (Groves 2006). Ideal tests for nonresponse bias include following up with a sample of nonrespondents to assess why they did not respond to the original survey and to obtain information about item specific attitudes and behaviors to compare against responders (Stedman et al. 2019). Without nonresponse follow-up or other sources of auxiliary data on nonrespondents formal testing of specific nonresponse bias is not possible. We do employ weights to account for variation in nonresponse rates by region in the state, age, and gender. Mail surveys in Nebraska typically draw disproportionate responses from people who are older (65+) than younger, and this is an important correction factor when experiences with, and attitudes towards drug laws are often correlated with age. A major area of concern is that people who use drugs may be less likely to complete the survey due to the criminalized and social stigmatized nature of the activity, which we would expect to be directly associated with our key outcome and several independent variables. However, our estimates for people who have used marijuana in the past year are lower, but within overlapping confidence intervals for estimates of Nebraskan past year marijuana use from the National Survey of Drug Use and Health (NSDUH). If there were nonresponse bias due to drug use, we would expect our estimates of recreational support to be more conservative than they would be otherwise. Another possibility for nonresponse bias is that the NASIS tends to have higher response rates from those who are 65 or older. Given the associations between age and support discussed previously, this could be a source of bias for the primary outcome measure. Weights are used to correct for this nonresponse.

Weights were created which account for the chance of selection by strata, within household probability of selection, nonresponse rates in different sampling strata, and post-stratification weights for region, age, and gender. All analyses in this paper use weights in Stata version 15 using the svy command suite. Data available by contacting BOSR for a data release (https://bosr.unl.edu/nasis). Researchers external to the University of Nebraska are required to complete a data sharing agreement form.

Measures

We used a single question about views on marijuana legalization taken from the Pew Research Center's American Trends Panel, Wave 53 (Danillar 2019) and Wave 87 (Van Green 2021). The question reads, "Which comes closer to your view about the use of marijuana by adults?" Participants could respond: "It should be legal for medical AND recreational use," or "It should be legal for medical use only," or "It should not be legal." This question form provides more options for support than yes/no marijuana legalization questions often found in polls.

Stigma is assessed by adapting the brief opioid stigma scale developed by Yang et al. (2019). We take their four item awareness scale and adapt it towards people who use marijuana, and for people who uses other substances, creating two separate stigma scales. For both scales, participants were asked how much they agree or disagree with four statements that all start with "Most people in my community believe that a person who uses ____...": . . .cannot be trusted; . . .is dangerous; . . .is to blame for their own problems; . . .is lazy. For one scale, we asked participants to answer the questions while thinking about cocaine, methamphetamine, opioids, or heroin—the CMOH scale—and the second scale asked participants to think about marijuana. The CMOH scale was asked first and the blank in the question was filled with "these substances." Participants were then asked to think about marijuana and given the second stigma scale. For this scale, the blank was filled with the word "marijuana." Participants could say strongly disagree (0), disagree (1), neither disagree or agree (2), agree (3), or strongly agree (4). The alpha for the

CMOH stigma questions was 0.7797 and 0.8525 for the marijuana stigma questions. Each final scale was constructed by averaging the responses across all four questions.

A total of eight geographic regions are used in analysis. Four of these are complete behavioral health regions defined by county borders: Panhandle, Southwest, South Central, and North. These four represent most of Nebraska's geographic area aside from the southeast. The last four regions are created by splitting the major cities out of their respective behavioral health regions. The cities of Omaha and Lincoln are on their own, both defined by ZIP codes, and the rest of their respective behavioral health regions are left on their own. A full map of these regions and the ZIP codes used to define Omaha and Lincoln are in the 2020 NASIS methodology report (BOSR 2020).

Participants responded if they lived in or on a farm; or in open country, but not on a farm; or if they lived in a town or city. This measures rural and urban variance within our larger regions and within the Omaha and Lincoln areas, both have been expanding rapidly into farming areas. For political party we asked participants, "In general, what do you consider yourself politically?" Responses were either: Democrat, Republican, Independent, or "Other, specify:" with a write-in field. There were enough responses for both of the latter categories that we left them intact. Recent personal marijuana use measured by self-reported use of marijuana in the past year: yes (1) or no (0).

Age is measured in years and participants were asked if they were male (0) or female (1). The NASIS uses the US Census style questions for race and ethnicity. The first question asks if a participant is Hispanic or Latino/a. The second provides a list of six options and participants may select as many as they wish: White (Caucasian), Black or African American, Asian, American Indian or Alaska Native, Native Hawaiian or Pacific Islander, and Other with a write-in field. Because of low responses to non-White categories, we used a binary indicator for those who are White and not Hispanic or Latino/a (1) as opposed to everyone who is not (0). Using this binary category and with the sampling weights, we estimate that 90.2% (88.4%–92.0%) of our sample describe themselves as White and not Hispanic or Latino/a. Our estimate is about 12 percentage points higher than the most recent US Census estimate for people that are White alone and not Hispanic or Latino/a in Nebraska of 78.2% (U.S. Census Bureau 2020).

Analytic Strategy

Multiple imputation with chained equations was used to estimate missing values. The variables with the most missing data in the 2213 cases were age (6.15%), political party (2.67%), and gender (2.03%). All variables presented in the analysis were imputed with either logistic regression, multinomial logistic regression, or predictive mean matching in Stata 15 using the mi command suite. A total of 50 imputations (M = 50) were completed with a seed of 68,588 and 10 burn in cycles. Multinomial logistic regression models in Stata 15 are used with the marijuana support measure as the dependent variable. The measures for age, marijuana stigma, and CMOH stigma were treated as continuous; all other measures used dummy variables. All descriptive and model estimates used the nested mi and svy commands in Stata for complex sampling design, post-stratification weights, and multiple imputations of missing data.

Results

The estimated percentages or means for each measure are shown in Table 1. The estimated average age is 50.98 years old, 50.4% are women, and 90.2% are White and not Hispanic or Latino. This latter estimate is higher than US Census estimates for Nebraska in 2019 which estimates that 78.2% of Nebraskans are White alone and not Hispanic or Latino (U.S. Census Bureau 2020).

Table 1. Estimated Percent or Means of the Measures (N = 2213; M = 50).

Measures	Estimated % or Mean	Linearized Standard Error	95% Confidence Intervals of the Estimated % or Mean	
Attitudes on Marijuana Use by Adults in Nebraska				
Legal for medical and recreational use	40.06%	1.48%	37.16%	42.96%
Legal for medical use only	43.12%	1.45%	40.27%	45.97%
Should not be legal	16.82%	1.02%	14.81%	18.82%
Age (mean)	50.98	0.44	50.11	51.85
Female	50.4%	1.5%	47.5%	53.4%
White and not Hispanic or Latino	90.2%	0.9%	88.4%	92.0%
Political party				
Democrat	24.89%	1.27%	22.40%	27.38%
Republican	45.75%	1.46%	42.89%	48.61%
Independent	23.25%	1.28%	20.74%	25.76%
Other	6.11%	0.85%	4.44%	7.77%
Region of Nebraska				
Panhandle	3.35%	0.13%	3.09%	3.61%
Southwest	3.98%	0.17%	3.64%	4.32%
South Central	9.19%	0.35%	8.51%	9.87%
North	8.10%	0.34%	7.42%	8.77%
Southeast without Lincoln	16.68%	0.71%	15.29%	18.07%
Midlands without Omaha	11.59%	0.41%	10.79%	12.39%
Lincoln	26.81%	0.88%	25.08%	28.54%
Omaha	20.30%	0.69%	18.94%	21.66%
Do you live on/in. . .				
Farm	9.22%	0.70%	7.85%	10.60%
Open country, but not a farm	9.75%	0.76%	8.26%	11.24%
Town or city	81.03%	0.95%	79.17%	82.89%
Marijuana Stigma Scale (mean)	1.95	0.03	1.90	2.00
CMOH Stigma Scale (mean)	2.67	0.02	2.63	2.71
Used marijuana in the past year	11.33%	1.04%	9.28%	13.38%

The largest political party in our sample is Republican (45.75%), followed by Democrat (24.89%), Independent (23.25%), and 6.11% said they were in another political party.

Regions of Nebraska were defined as eight separate areas based on county borders and ZIP codes. These regions were used as sampling strata to ensure that we had enough responses from each region to make comparisons, and then weighted to the estimated proportion of Nebraskans in each region. The estimated percent that lived in a town or city was 81.03%, the remainder split between living on a farm (9.22%), or in open country but not on a farm (9.75%).

The average marijuana stigma scale score is 1.95 and the average CMOH stigma scale score is 2.67. Both scales range in value from 0 to 4 with a higher score indicating more stigma. We estimate that 11.33% (95% CI: 9.28%–13.38%) of Nebraskans had used marijuana in the past year. The National Survey of Drug Use and Health (NSDUH) combined 2019 and 2020 survey data to estimate that 14.07% (95% CI: 11.96%–16.49%) of Nebraskans 18 or older had used marijuana in the past year (NSDUH 2021). The difference between the two may be due to interview mode differences or a slight shift in eligible ages. The NASIS does not include 18 year olds (19 is the age of majority in Nebraska), and the NSUDH is an in-person computer assisted

interview, whereas the NASIS is a mail survey. In response to the question about marijuana legality, 40.06% of respondents said that marijuana should be legal for medical and recreational use, 43.12% said that marijuana should be legal for medical use only, and 16.82% said marijuana should not be legal.

There are number of key differences shown in the multinomial logistic regression analysis shown in Table 2. Republicans are consistently different in their odds of supporting legal responses compared to Democrats, but we do not see statistically significant differences between Democrats and Independents or those in other parties on this issue. Compared to the Omaha region, respondents from the Panhandle, Southwest, South Central, and Southeast without Lincoln regions were more likely to say that marijuana should not be legal compared to allowing for medical marijuana. There were no differences in any of the regions compared to Omaha in opinion between recreational or only medical options. Older respondents are more likely to prefer medical marijuana only to recreational and medical, and to prefer that marijuana should not be legal at all compared to medical only. Participants who lived on a farm or in open country were less likely to support recreational and medical marijuana compared to medical marijuana only than those in towns. As participants report higher levels of the marijuana stigma scale, they have lower odds of supporting recreational and medical use, in favor of just medical, but also increasingly favor that marijuana should not be legal at all. The opposite occurs for CMOH stigma scale, where high levels are associated with more support for recreational and medical marijuana compared to medical only, and less support for saying that marijuana should not be legal compared to medical only. Having used marijuana at least once in the past year is strongly associated with being in favor of recreational and medical use of marijuana compared to medical only.

Using the models from Table 2, we calculate the average adjusted predictions and the 95% confidence intervals of the three legal options in Table 3. Legal preference changes by age dramatically. Support for recreational and medical marijuana is predicted at just over 60% for the youngest participants and falling to 17% at the oldest range. As support for recreational and medical use falls, support for medical use only takes up most of the difference. Support for marijuana not being legal at all is predicted to increase as well, but does not exceed 30% at any age point.

Across regions of Nebraska, most of the support is either for recreational and medical, or medical only. Only two regions are estimated to have more than 20.0% support for marijuana not being legal at all (Southwest and South Central). Most of the regions are estimated to have somewhat close levels of support for the two legalization options, typically with overlapping confidence intervals.

We estimate that only 9.9% of Democrats support the not legal option; the remaining support either recreational and medical use (49.2%) or medical only (40.9%) (Figure 3). Republicans do have more support for the not legal position than Democrats at 22.4%, but the plurality favor medical use only (45.2%) with the rest supporting recreational and medical (32.4%). Independent participants are fairly split between recreational and medical support (42.4%) and medical only support (45.9%), with only 11.7% supporting a not legal option.

Support of marijuana legal options changes considerably with the amount of stigma towards people who use marijuana in the area where the participant lives. We show that those who report low perceived stigma towards people who use marijuana also have a high level of support for recreational marijuana and medical use (76.9%). As reported stigma rises, support for recreational and medical use falls rapidly. As recreational support falls, support for medical use slowly rises, but support for it to be not legal increases rapidly as stigma towards people who use marijuana increases. We estimate that 54.9% of average participants who said they “strongly agree” with all four stigma questions support keeping marijuana not legal.

Reported stigma towards people that use cocaine, methamphetamine, opioids, or heroin (CMOH) in the area where the participant lives is associated with support for marijuana legal

Table 2. Multinomial Logistic Regression Models Predicting Support for Marijuana Policies (N = 2213; M = 50).

	Model 1: Legal for Recreational and Medical Use Compared to Legal for Medical Only				Model 2: Marijuana Should Not be Legal Compared to Legal for Medical Only			
Measure	exp(b)	*p*-value	95% CI		exp(b)	*p*-value	95% CI	
Age	0.964	<.001	0.954	0.974	1.013	.012	1.002	1.023
Political party								
Democrat	(Reference)				(Reference)			
Republican	0.396	<0.001	0.256	0.613	2.390	<0.001	1.515	3.771
Independent	0.670	0.057	0.428	1.049	1.097	0.952	0.616	1.952
Other party	1.262	0.708	0.565	2.819	1.816	0.429	0.459	7.184
Gender								
Male	(Reference)				(Reference)			
Female	−0.702	<0.001	0.356	0.704	0.865	0.322	0.627	1.193
Self described race								
White and not Hispanic or Latino	0.488	0.102	0.906	2.918	0.805	0.57	0.418	1.552
Not White	(Reference)				(Reference)			
Nebraska behavioral health regions with separate Omaha and Lincoln								
Panhandle	0.989	0.899	0.541	1.810	2.239	0.027	1.179	4.251
Southwest	0.681	0.215	0.364	1.277	3.148	<0.001	1.660	5.971
South Central	0.946	0.765	0.549	1.631	2.633	0.003	1.406	4.932
North	0.670	0.206	0.373	1.204	1.486	0.228	0.781	2.825
Southeast without Lincoln	0.598	0.079	0.336	1.065	1.951	0.04	1.017	3.744
Midlands without Omaha	0.622	0.068	0.370	1.045	1.380	0.335	0.722	2.638
Lincoln	1.172	0.489	0.696	1.972	1.668	0.106	0.822	3.386
Omaha	(Reference)				(Reference)			
Type of place where you live								
Farm	0.468	0.024	0.248	0.881	0.862	0.656	0.556	1.337
Open country, but not a farm	0.490	0.023	0.295	0.814	0.808	0.3	0.508	1.286
Town or city	(Reference)				(Reference)			
Marijuana Stigma Scale average	0.362	<0.001	0.291	0.452	2.647	<0.001	1.941	3.610
CMOH Drug Stigma Scale average	1.831	<0.001	1.385	2.422	0.557	<0.001	0.405	0.766
Used marijuana in past year	13.569	<0.001	6.193	29.729	0.157	0.05	0.024	1.040
Intercept	10.999	<0.001	3.172	38.132	0.047	<0.001	0.014	0.162

Table 3. Average Adjusted Predictions of Support Based on Models Presented in Table 2.

		Recreational and Medical			Medical Only			Not Legal at all	
Measures		Estimate, %	Confidence Interval, %		Estimate, %	Confidence Interval, %		Estimate, %	Confidence Interval, %
Age									
19	60.7	54.5	66.9%	30.4%	24.6%	36.3%	8.9%	5.9%	11.8%
29	54.0	49.3	58.7%	35.0%	30.3%	39.8%	11.0%	8.2%	13.8%
39	47.3	44.0	50.7%	39.4%	35.8%	43.0%	13.3%	10.8%	15.7%
49	40.9	38.3	43.4%	43.4%	40.6%	46.3%	15.7%	13.6%	17.8%
59	34.8	32.2	37.5%	46.9%	44.0%	49.8%	18.3%	16.3%	20.3%
69	29.4	26.1	32.6%	49.7%	46.1%	53.4%	20.9%	18.3%	23.5%
79	24.5	20.6	28.4%	51.9%	47.0%	56.8%	23.6%	19.8%	27.3%
89	20.3	16.0	24.6%	53.4%	47.0%	59.8%	26.3%	21.0%	31.6%
99	16.7	12.2	21.3%	54.3%	46.2%	62.4%	29.0%	21.9%	36.1%
Political party									
Democrat	49.2	43.9	54.6%	40.9%	35.3%	46.5%	9.9%	6.7%	13.0%
Republican	32.4	28.9	35.9%	45.2%	41.3%	49.2%	22.4%	19.4%	25.3%
Independent	42.4	37.6	47.2%	45.9%	40.5%	51.4%	11.7%	8.1%	15.2%
Other party	51.2	38.2	64.2%	34.2%	21.6%	46.7%	14.7%	0.5%	28.8%
Gender									
Male	45.3	41.4	49.2%	38.1%	33.9%	42.2%	16.7%	13.9%	19.4%
Female	35.4	32.6	38.2%	47.7%	44.4%	50.9%	16.9%	14.6%	19.3%
Self described race									
White and not Hispanic or Latino	40.9	38.4	43.4%	42.6%	39.9%	45.3%	16.5%	14.6%	18.4%
Not White	33.4	26.3	40.5%	46.1%	36.6%	55.7%	20.5%	12.5%	28.4%
Nebraska behavioral health regions with separate Omaha and Lincoln									
Panhandle	40.9	34.2	47.6%	39.4%	32.2%	46.5%	19.7%	15.0%	24.4%
Southwest	34.3	27.7	40.8%	39.8%	32.7%	47.0%	25.9%	20.4%	31.4%
South Central	39.6	34.2	45.1%	38.3%	32.4%	44.3%	22.0%	17.3%	26.8%
North	36.4	30.1	42.6%	47.7%	41.0%	54.5%	15.9%	11.5%	20.3%

(Continued)

Table 3. (Continued)

Measures		Recreational and Medical			Medical Only			Not Legal at all	
		Estimate, %	Confidence Interval, %		Estimate, %	Confidence Interval, %		Estimate, %	Confidence Interval, %
Age									
Southeast without Lincoln	34.0	28.3	39.8%	46.4%	39.9%	52.9%	19.5%	14.8%	24.3%
Midlands without Omaha	35.5	30.5	40.4%	49.3%	43.2%	55.4%	15.2%	10.9%	19.6%
Lincoln	44.6	38.9	50.2%	39.8%	33.3%	46.4%	15.6%	10.2%	20.9%
Omaha	43.4	37.4	49.5%	45.6%	38.7%	52.4%	11.0%	6.7%	15.3%
Type of place where you live									
Farm	31.0	22.9	39.2%	51.8%	43.3%	60.2%	17.2%	12.4%	22.0%
Open country, but not a farm	31.8	25.3	38.2%	51.9%	44.2%	59.5%	16.4%	11.7%	21.0%
Town or city	41.6	39.0	44.2%	41.4%	38.5%	44.3%	17.0%	14.9%	19.1%
Marijuana Stigma Scale									
Strongly disagree	76.9	71.0	82.9%	21.8%	16.0%	27.5%	1.3%	0.5%	2.2%
Disagree	59.2	55.0	63.4%	35.7%	31.7%	39.8%	5.1%	3.4%	6.8%
Neither disagree or agree	39.0	36.4	41.6%	46.0%	43.1%	48.8%	15.0%	13.0%	17.1%
Agree	21.9	18.6	25.3%	45.0%	39.8%	50.2%	33.0%	27.8%	38.3%
Strongly agree	11.2	8.0	14.4%	33.9%	24.0%	43.8%	54.9%	44.4%	65.5%
CMOH Drug Stigma Scale									
Strongly disagree	17.7	11.7	23.6%	36.7%	23.0%	50.4%	45.6%	31.3%	60.0%
Disagree	24.8	19.7	29.9%	41.2%	32.5%	49.9%	34.0%	25.2%	42.7%
Neither disagree or agree	33.7	30.5	36.8%	43.0%	38.8%	47.1%	23.3%	19.6%	27.0%
Agree	43.9	41.2	46.6%	41.4%	38.5%	44.2%	14.7%	12.9%	16.5%
Strongly agree	54.8	48.6	61.1%	36.7%	30.7%	42.8%	8.5%	5.8%	11.1%
Used marijuana in past year									
No	36.2	33.5	38.8%	46.1%	43.2%	48.9%	17.8%	15.8%	19.7%
Yes	81.8	72.7	90.9%	16.6%	7.9%	25.3%	1.6%	−1.1%	4.3%

options in the opposite fashion. Low levels of stigma towards people who use CMOH is associated with high levels of support for marijuana remaining illegal (45.6%) and low levels of support for marijuana being legal for recreational and medical use (17.7%). However, those reporting high levels of perceived CMOH stigma reverse their levels of support. Of those reporting the highest area stigma towards CMOH, we estimate that 54.8% support recreational and medical marijuana, and only 8.5% think it should not be legal at all.

Using marijuana in the past year is strongly associated with support for recreational and medical legal use (81%) and only 1.6% of people who used marijuana in the past year say it should not be legal. For those who have not used marijuana in the past year, 36% are estimated to support recreational and medical use, 46.1% for medical use only, and 17.8% not legal at all.

Discussion

A minority (16.82%) of adult Nebraskans support keeping marijuana illegal. Combining our two response options of legal medical use, we estimate that 83.18% of adult Nebraskans support medical marijuana access, an overwhelming majority. Support for recreational and medical use is high (40.06%), but was not in the majority when the survey was fielded in 2020. Our findings are in line with what Pew recently reported when they fielded the same question in 2021. Pew estimates that 91% of U.S. adults think that marijuana should be legal for medical use and only 8% think it should be illegal (Van Green 2021).

In every region of Nebraska, a small minority think that marijuana should not be legal, exceeding 20.0% in only two regions (Southwest 25.9% and South Central 22.0). Low support for prohibition holds for people who are living on farms (17.2%) or in open country (16.4%), or in a town or city (17.0%). Among Republicans, only 22.4% support keeping marijuana illegal, with lower support in other parties. Legalizing marijuana for medical use has an overwhelming majority in public opinion, and it is largely a bipartisan opinion in the state of Nebraska.

What differences there are for support between the legal options are important, especially geographic differences. Within-state studies have shown that even when states pass recreational marijuana laws there will likely remain considerable opposition in different parts of the states (Beltz, Mosher, & Schwarts 2020). This opposition can change the ways marijuana will be available in those locations through city and county controls over distribution licenses. As with alcohol distribution, local opposition can create “dry” counties, or those with special access laws (e.g., restricting business hours or days). However, opposition and support of marijuana policy is not fixed and will likely continue to shift after laws change. Subbaramn and Kerr (2017) found that support for legal recreational marijuana in Washington increased by 10 percentage points between 2014 and 2016, after the state voted for legalization in 2012. The authors note that favorability towards marijuana increased even among people who had never used the substance, suggesting a larger shift in how the substance is viewed.

The major differences in opinion among Nebraskans seem to be whether marijuana should be available for recreational use or just for medical access. In many regions of the state, we estimate less than a 5% difference in support between these two legalization positions. There are bigger differences based on the type of place a respondent lived. Participants living on a farm or in open country had much lower support for recreational use than those living in a town or city. Republicans also had lower support for recreational than they did for medical alone, although we estimate 32.4% of Republicans do support recreational use. Compared to the recent national Pew study, support for recreational legalization is lower for both political parties in Nebraska (Van Green 2021). Pew found that 72% of U.S. Democrats support recreational (49.2% NE Democrats) and that 47% of U.S. Republicans support recreational (32.4% NE Republicans) (Van Green 2021). There are also differences by gender, with women having lower support for recreational

use than men compared to medical use alone. Support for recreational use also falls quickly as people get older, with estimates of less than a third supporting recreational use over the age of 69.

When studies have measures of stigma available, there is typically an association between stigma towards people who use drugs and attitudes about legality of the substances (Yang et al. 2017). Some of the most dramatic shifts of support in Nebraska are in association with the reported levels of stigma in an area. As a participant's reported level of community stigma towards people that use marijuana rises, there is far less support for either legal marijuana option. The reverse is true for stigma toward people that use cocaine, methamphetamine, opioids, or heroin. In this case, as the level of reported perceived stigma rises, there are higher levels of support for recreational and medical marijuana. Clearly, these measures are capturing something quite different in how perceived stigma and its connection to legal opinions varies by substance type. One piece that may be driving the difference is endorsement of substituting marijuana for opioids. Although evaluations on the extent to which this substitution occurs in states with medical marijuana appears to be mixed (Wendelboe, Mathew, Chongsuwat, Rainwater, Wendelboe, Wickersham, & Chou, 2019), there is evidence that patients self-report substituting marijuana for opioids (Ishida et al. 2019; Mercurio et al. 2019) and among people who inject drugs (Kral et al. 2015). We focused on comparing stigma towards marijuana to other commonly used illegal substances. However, this leaves us unable to tease apart differences by substances in the CMOH scale itself.

Stigma towards people who use drugs is an important component to understanding public support for drug policies at the national, state, and local levels. As Beltz et al. (2020) demonstrated, there can be considerable variation in county-level substance access and public opinion even when a state legalizes a substance. How people view those who use a drug is an important element to consider, particularly when people do not have direct experience with a substance. In those cases, it is stigma and stereotypes that informs their opinions about those associated with a substance and their attitudes towards laws or public health measures. Without including measures of stigma towards people who use drugs studies are missing an important aspect of support or opposition towards substance policies.

Limitations

A weakness of the CMOH stigma scale is we may have blurred the response by asking about opioids along with cocaine, methamphetamine, and heroin. Substituting marijuana for prescription opioids is a documented response to the current overdose crises (Ishida et al. 2019; Mercurio et al. 2019; Wendelboe et al. 2019) and may result in very different responses to marijuana legality associated with stigma towards people who use opioids or those who use methamphetamine. Prescription opiates also differ from heroin, cocaine, and methamphetamine in their medical and pharmaceutical origin. In blending the CMOH stigma category together, we may have captured items moving in opposite directions. Any of these possibilities are beyond our ability to detect in the current data, but may explain why we see such strongly opposing associations with stigma and legalization attitudes for marijuana. In future studies, we will split prescription opioids out of our CMOH scale and potentially split the stimulants from heroin as well to better assess these effects.

A further weakness of both stigma scales is that they do not provide a range of use. Instead, they contrast opinions about people who use a substance in any way towards those that do not. This masks the reality that a wide range of drug use is possible and that not all use is equivalent to misuse.

Another limitation of this project is the reduced ability to look at differences among non-White populations. Despite an initial mailing to 8000 addresses and a 27.7% response rate, less than 10% of the sample selected categories that were not White. This leaves us with an excellent sample to discuss variation within people who identify as White in Nebraska, but less room for

other categories. Prior research on the relationship between race categories and marijuana legality in the modern era is mixed. Beltz et al. (2020) found higher support in counties in Washington with more White non-Hispanic people, whereas Collingwood et al. (2018) found no difference in support between White non-Hispanic people and others. In Denham's study (2019) study of GSS data there were few differences in support for legality between White, Black, and other categories through the 1980s and 1990s. However, in 21st century GSS data, White and Black participants often had lower odds of support compared to the other category (Denham 2019).

Conclusion

It is clear from our estimates that despite a complete marijuana prohibition, the overwhelming majority of adult Nebraskans support medical marijuana and only a small minority think that marijuana should not be legal for adults. This support for medical marijuana crosses political party lines, rural and urban areas, region of Nebraska, and gender. However, support for recreational use of marijuana in Nebraska rarely exceeds 50% and there are substantial differences in support for recreational marijuana compared to medical support by political party, gender, between rural and urban areas, and whether people have used marijuana in the past year. Here, Nebraska illustrates that though states that have been resistant to legalization are now embracing medical marijuana, there remains far less consensus about recreational use laws. Patterns seen in Nebraska are useful to understand political dynamics in other late adopting states with Republican legislatures, strong urban/rural divides, and in the central region of the US. We also highlight an additional component to consider when assessing support for marijuana legalization options. Measures of perceived stigma towards people who drugs were strongly associated with support for legal options in Nebraska, and in some surprising ways. Few studies of political support for legalization account for stigma in general, but we demonstrate that these measures are important to include, and operate differently depending upon the substance.

In Nebraska, medical marijuana bills have failed both in 2019 and in 2021 (Dunker 2021; Schulte 2021). This leaves the stage set for a ballot initiative in 2022. Despite our estimate of overwhelming public support for medical marijuana, the 2022 election will test how well public opinion translates to voting behavior in Nebraska.

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