



The Growing Intersection between Cannabis and Older Persons

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University of Iowa

February 7, 2019

Acknowledgements



TODAY'S PRESENTATION

- How did we get here?
- What did we find?
- Where are we going?

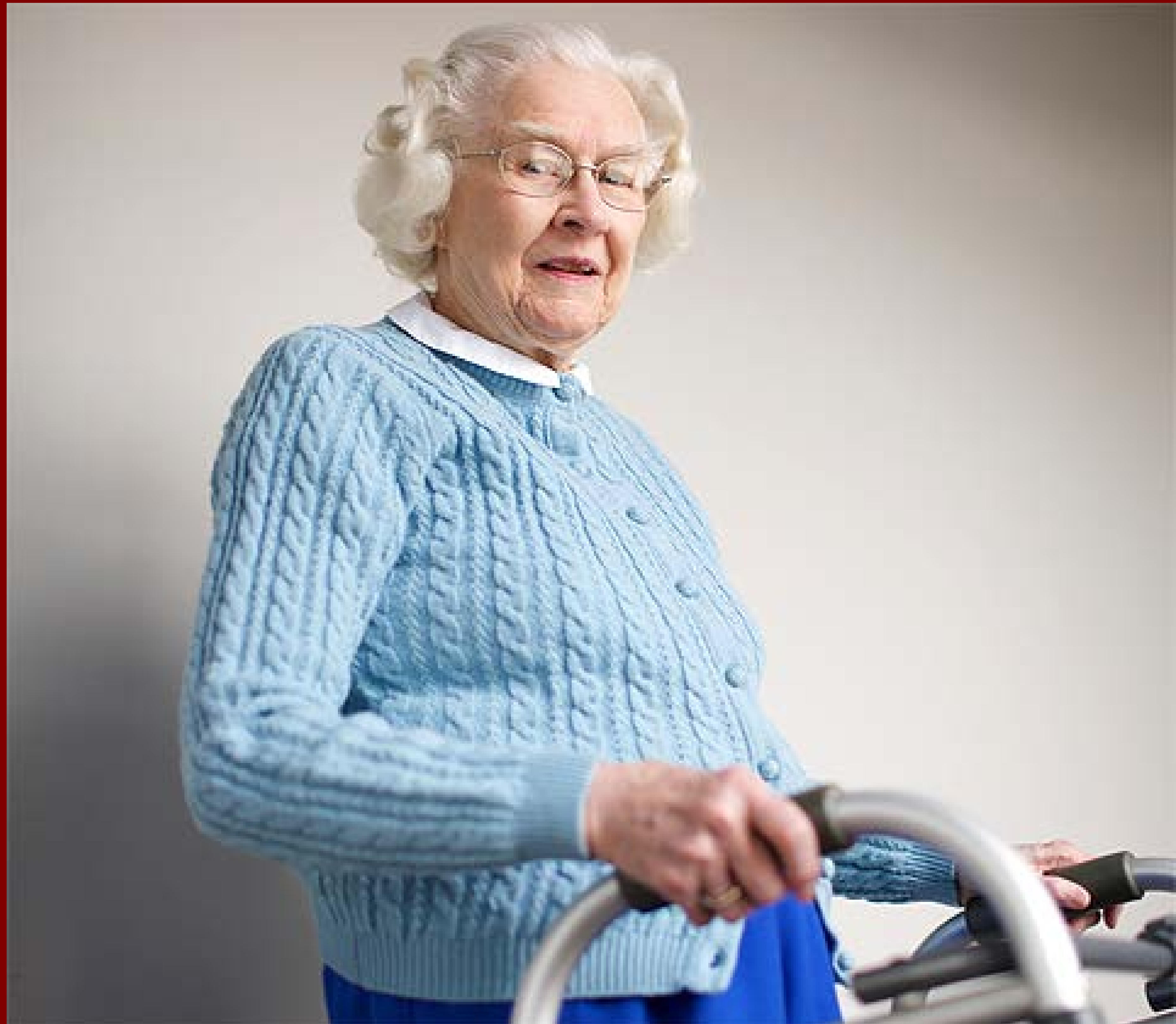
1980s



Nursing Home Reform Act of 1987

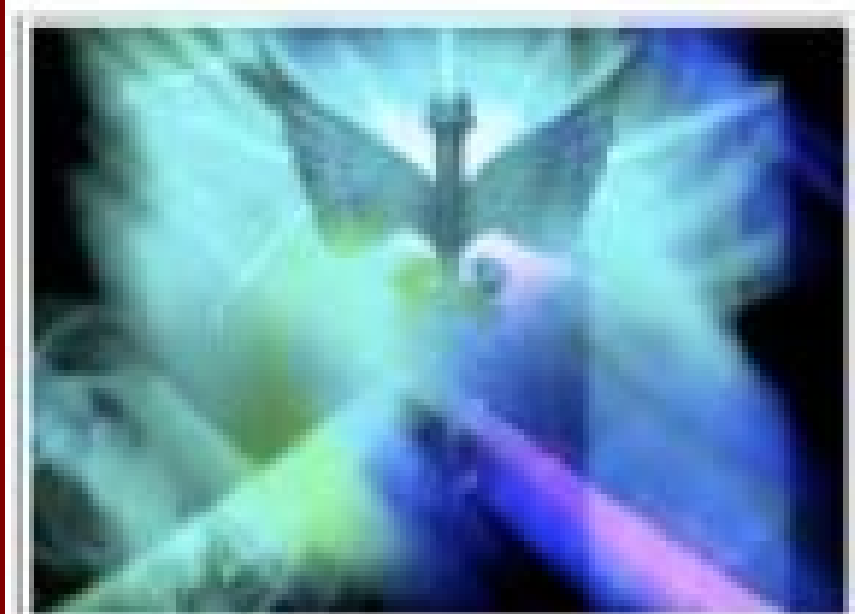
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Back in Iowa...





Improving Dementia Care and Reducing Unnecessary Use of Antipsychotic Medications in Nursing Homes



Alice Bonner, PhD, RN
Division of Nursing Homes
Center for Clinical Standards and Quality
Centers for Medicare & Medicaid Services

January 31st, 2013



SPECIAL COMMITTEE ON AGING



2016 Data

Cannabis & Older Adults

TABLE 2. Percentage of past month marijuana use* among all persons aged ≥12 years, by age group — National Survey on Drug Use and Health, United States, 2002–2014

Age group (yrs)	2002 %	2003 %	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %	2014 %	Linear trend p-value [‡]	% change (diff) 2002 to 2014
Total	6.2 (5.9–6.5)	6.2 (5.9–6.4)	6.1 (5.8–6.4)	6.0 (5.7–6.3)	6.0 (5.8–6.3)	5.8 (5.6–6.1)	6.1 (5.8–6.4)	6.7 (6.4–7.0)	6.9 (6.6–7.2)	7.0 (6.7–7.3)	7.3 (6.9–7.6)	7.5 (7.2–7.9)	8.4 (8.1–8.7)	<0.001 [§]	+35
12–17	8.2 (7.7–8.6)	7.9 (7.4–8.4)	7.6 (7.1–8.1)	6.8 (6.4–7.3)	6.7 (6.3–7.1)	6.7 (6.3–7.2)	6.7 (6.3–7.1)	7.4 (6.9–7.8)	7.4 (6.9–7.9)	7.9 (7.4–8.4)	7.2 (6.8–7.7)	7.1 (6.6–7.5)	7.4 (6.8–7.9)	NS	-10
18–25	17.3 (16.6–18.0)	17.0 (16.3–17.7)	16.1 (15.4–16.9)	16.6 (15.9–17.3)	16.3 (15.6–17.0)	16.5 (15.8–17.2)	16.6 (15.9–17.3)	18.2 (17.5–19.0)	18.5 (17.8–19.3)	19.0 (18.3–19.8)	18.7 (18.0–19.5)	19.1 (18.3–19.8)	19.6 (18.7–20.5)	<0.001 [§]	+13
≥26	4.0 (3.7–4.3)	4.0 (3.7–4.3)	4.1 (3.8–4.4)	4.1 (3.7–4.4)	4.2 (3.8–4.5)	3.9 (3.6–4.2)	4.2 (3.9–4.6)	4.6 (4.3–4.9)	4.8 (4.4–5.1)	4.8 (4.5–5.2)	5.3 (4.9–5.7)	5.6 (5.2–6.0)	6.6 (6.2–6.9)	<0.001 [§]	+65
26–34	7.7 (7.0–8.6)	8.4 (7.6–9.3)	8.3 (7.5–9.3)	8.6 (7.7–9.7)	8.5 (7.6–9.4)	7.9 (7.1–8.8)	8.8 (7.9–9.7)	9.6 (8.7–10.6)	10.6 (9.5–11.7)	10.2 (9.2–11.3)	11.3 (10.3–12.4)	12.6 (11.5–13.9)	12.7 (11.9–13.6)	<0.001 [§]	+65
35–44	5.6 (5.0–6.4)	6.0 (5.3–6.8)	5.5 (4.8–6.2)	4.8 (4.2–5.5)	5.5 (4.8–6.4)	5.0 (4.3–5.7)	5.1 (4.4–5.8)	4.8 (4.2–5.5)	5.4 (4.7–6.1)	5.4 (4.7–6.2)	5.9 (5.1–6.7)	6.3 (5.6–7.1)	8.0 (7.4–8.7)	<0.001 [§]	+43
45–54	4.0 (3.4–4.7)	3.3 (2.7–4.0)	4.5 (3.7–5.4)	4.3 (3.6–5.1)	4.5 (3.8–5.3)	4.4 (3.6–5.3)	3.9 (3.3–4.8)	4.9 (4.2–5.7)	5.0 (4.2–5.9)	4.9 (4.1–5.7)	5.2 (4.4–6.1)	5.4 (4.5–6.5)	5.9 (5.2–6.6)	<0.001 [§]	+48
55–64	1.1 (0.6–1.8)	1.2 (0.7–1.8)	1.0 (0.6–1.7)	1.8 (1.2–2.6)	1.4 (0.9–2.0)	1.5 (1.0–2.2)	3.2 (2.2–4.4)	3.1 (2.3–4.1)	2.6 (1.9–3.5)	3.4 (2.6–4.3)	3.7 (2.9–4.7)	3.8 (3.1–4.6)	6.1 (5.2–7.1)	<0.001 [§]	+455
≥65	0.3 (0.1–1.0)	0.1 (0.0–0.3)	0.1 (0.0–0.5)	0.3 (0.1–1.0)	0.2 (0.1–0.5)	0.2 (0.1–0.6)	0.3 (0.1–0.7)	0.6 (0.2–1.3)	0.5 (0.2–1.0)	0.7 (0.4–1.2)	0.9 (0.5–1.5)	0.9 (0.5–1.5)	1.3 (0.9–1.8)	<0.001 [§]	+333

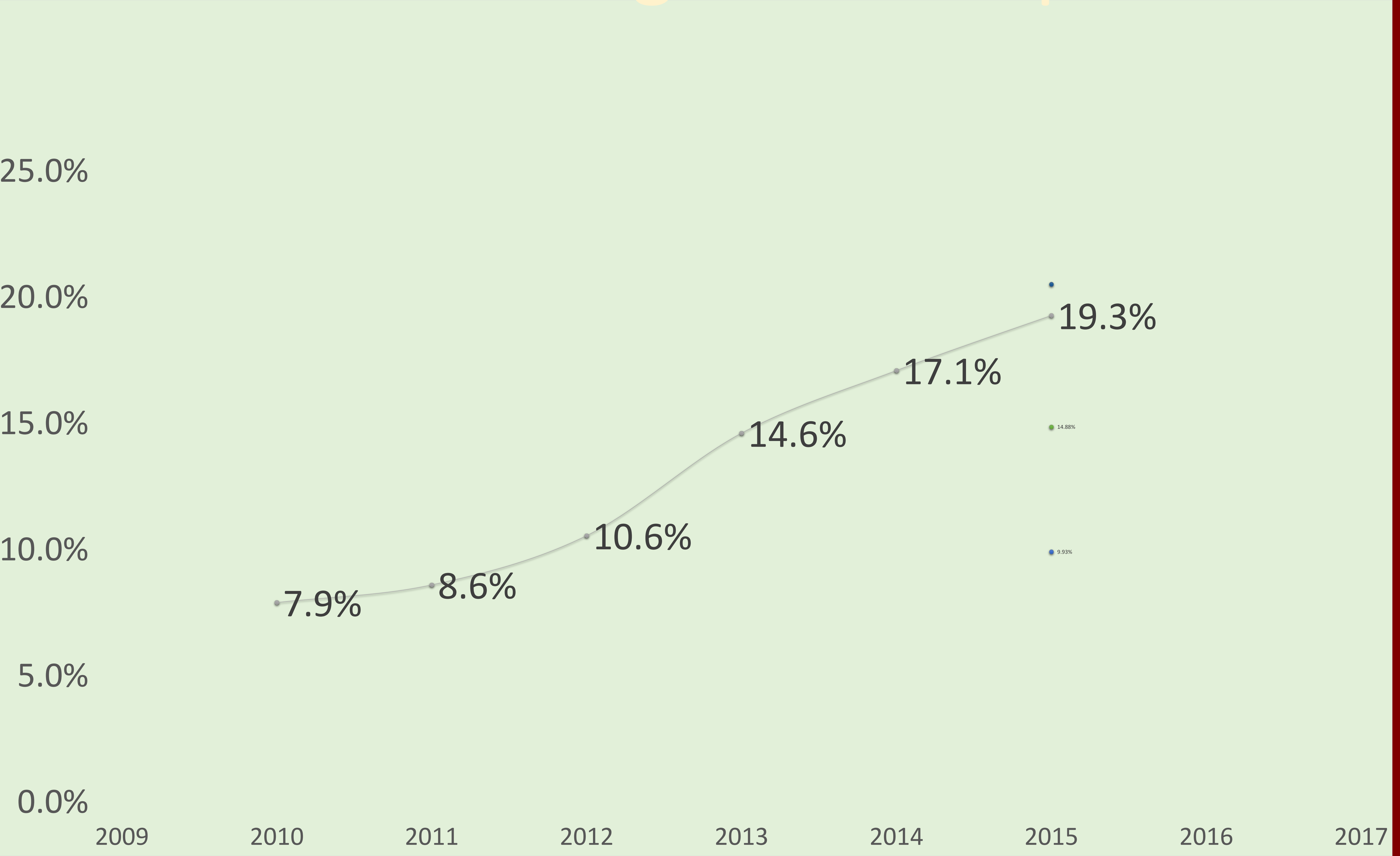
Abbreviations: CI = confidence interval; diff = difference; NS = not significant; + = increase; - = decrease.

* Past month use of marijuana is defined as those who reported use of marijuana within 30 days preceding the date of interview.

[‡] Linear trends were assessed using logistic regression model from the 2002–2014 survey years.

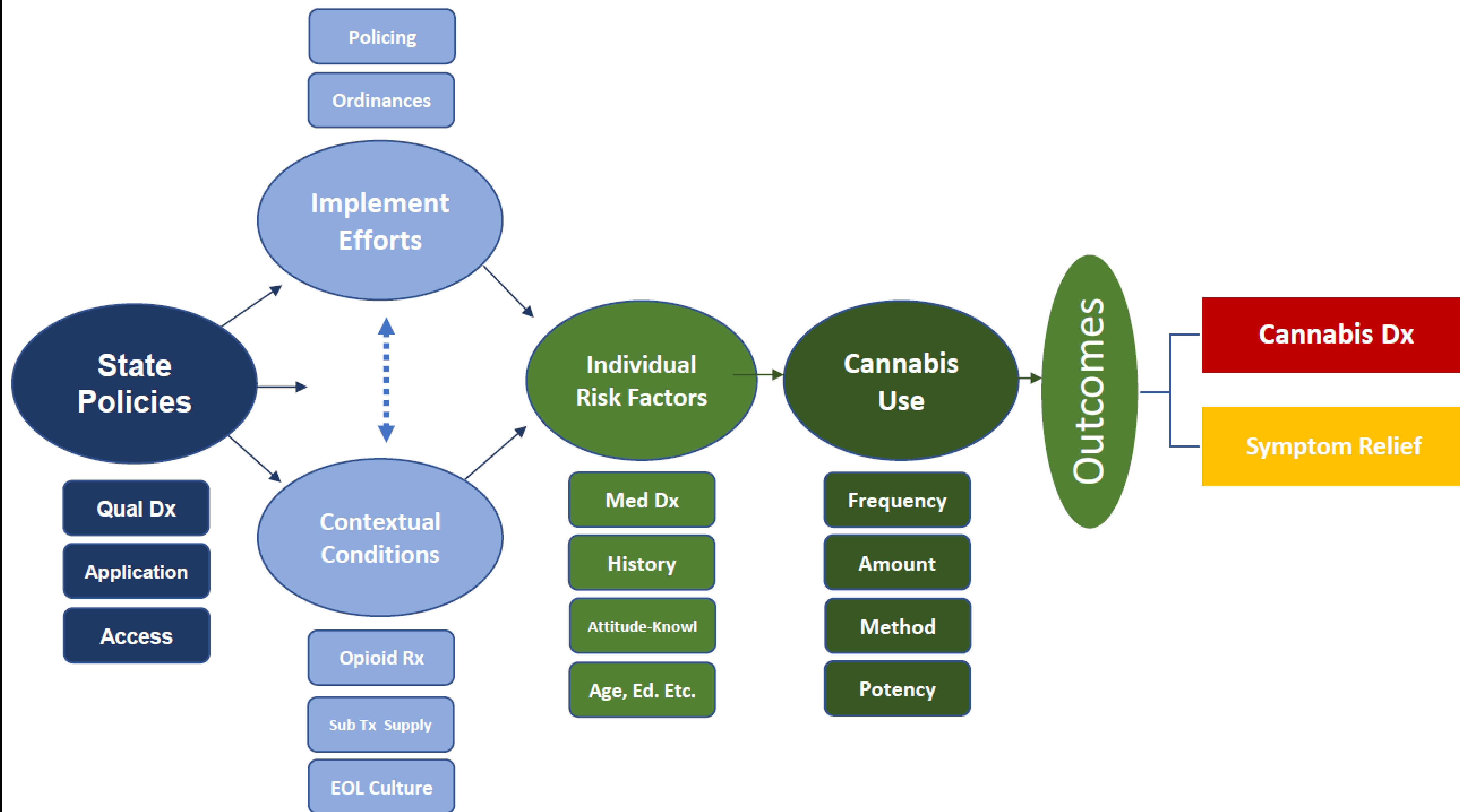
[§] Logistic regression ($p < 0.05$).

State Cannabis Program Participation 65+



Previous Research

Figure 1: State Policies, Local Implementation Efforts and Cannabis Use among Older Americans



Three Types of Studies

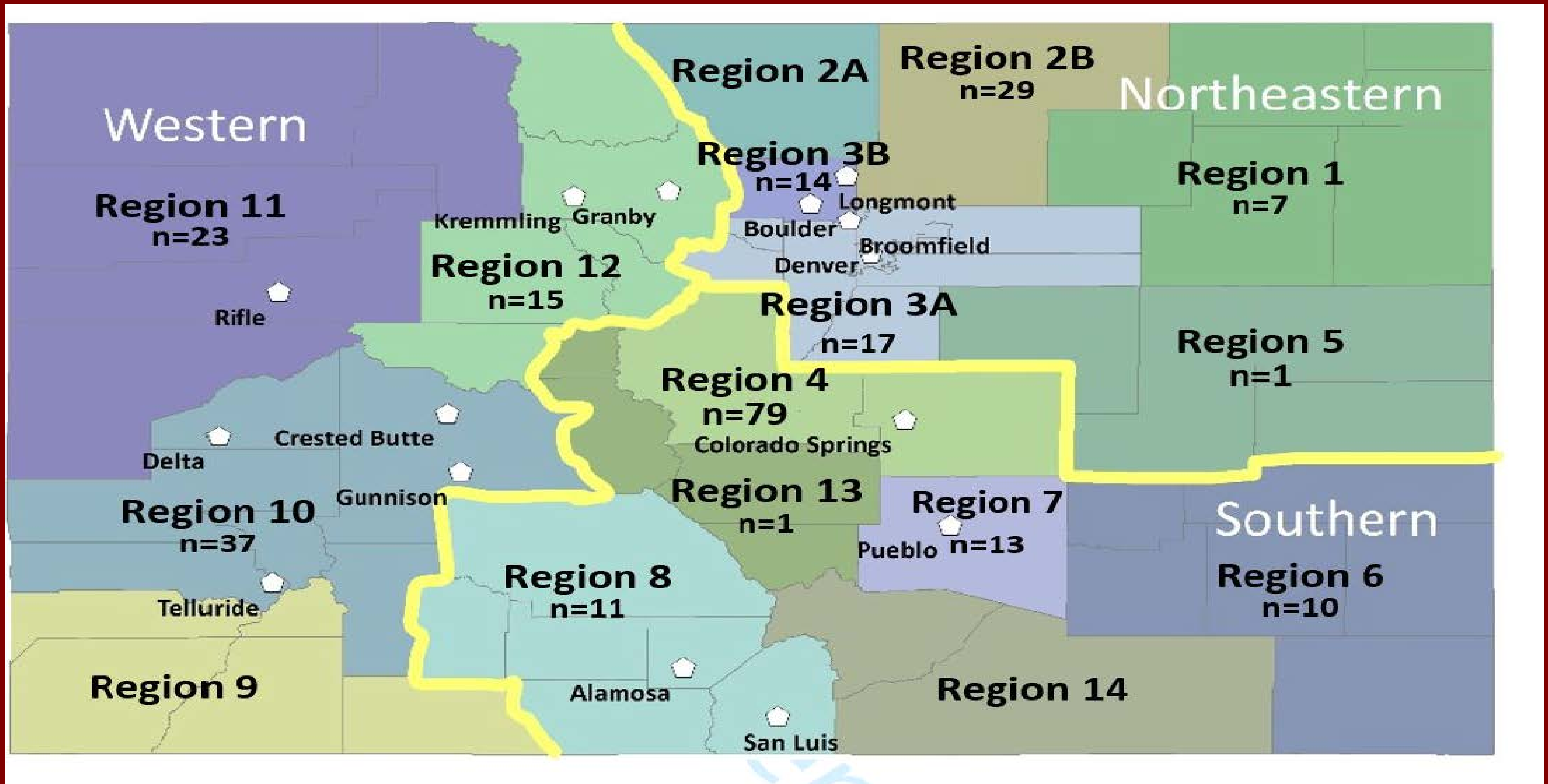
- Surveillance
- Focus Groups
- Clinical Assessments

State of Colorado,
Department of Public Health

State of Illinois,
Department of Public Health

What are older adults' attitudes toward cannabis?

We surveyed 276 users and non-users across over 60



More than 100 survey questions...

GENERAL ATTITUDES ABOUT MARIJUANA

14. Regardless of my current state law, I am in favor of legalized marijuana for the following reasons:

A. Tax its sale for state revenue

B. Medical benefits

C. Recreational use

D. Reduction of burden on legal/prison system

E. Safer, easier access

F. Other:

G. Other:

H. Other:

I. Other:

Do Not Agree

Strongly Agree

1

2

3

4

5

1

2

3

4

5

1

2

3

4

5

1

2

3

4

5

1

2

3

4

5

15. Has a health provider talked to you about marijuana use?

No

Yes

0

1

Table 1: Attitudes regarding Recreational & Medical Marijuana						
<i>Recreational</i>		Do not agree			Strongly Agree	
		[1]	[2]	[3]	[4]	[5]
I currently believe that use of marijuana for a recreational purpose is acceptable. (N=265)		33%	10%	16%	12%	29%
Recreational marijuana use is risky. (N=266)		18%	17%	17%	15%	33%
When I was 18 years old, I believed that using marijuana for a recreational purpose was acceptable. (N=260)		56%	8%	13%	10%	14%
The imp. people in my life have positive attitudes toward using recreational marijuana. (N=264)		31%	14%	24%	15%	17%
Using recreational marijuana leads to the use of harder drugs		35%	16%	16%	12%	22%
Regardless of my current state law, I am in favor of legalized marijuana for recreational use (N=257)		31%	12%	13%	16%	28%
<i>Medical</i>						
		[1]	[2]	[3]	[4]	[5]
I currently believe that use of marijuana for a medical purpose is acceptable. (N=265)		5%	3%	15%	18%	59%
Medical marijuana use is risky. (N=263)		28%	23%	28%	11%	10%
When I was 18 years old, I believed that using marijuana for a medical purpose was acceptable. (N=256)		53%	9%	21%	6%	12%
The people in my life have positive attitudes toward using medical marijuana. (N=261)		18%	11%	20%	20%	31%
Using medical marijuana leads to the use of harder drugs (N=262)		47%	16%	16%	6%	15%
Regardless of my current state law, I am in favor of legalized marijuana for medical benefits (N=256)		8%	2%	13%	20%	60%

Groupings

NO

**NEVER HAD,
NEVER WILL
NEVER..EVER**

NEVER FOR ME,
BUT
OK FOR YOU

NOT NOW,
BUT MAYBE
I WILL IF...

YES

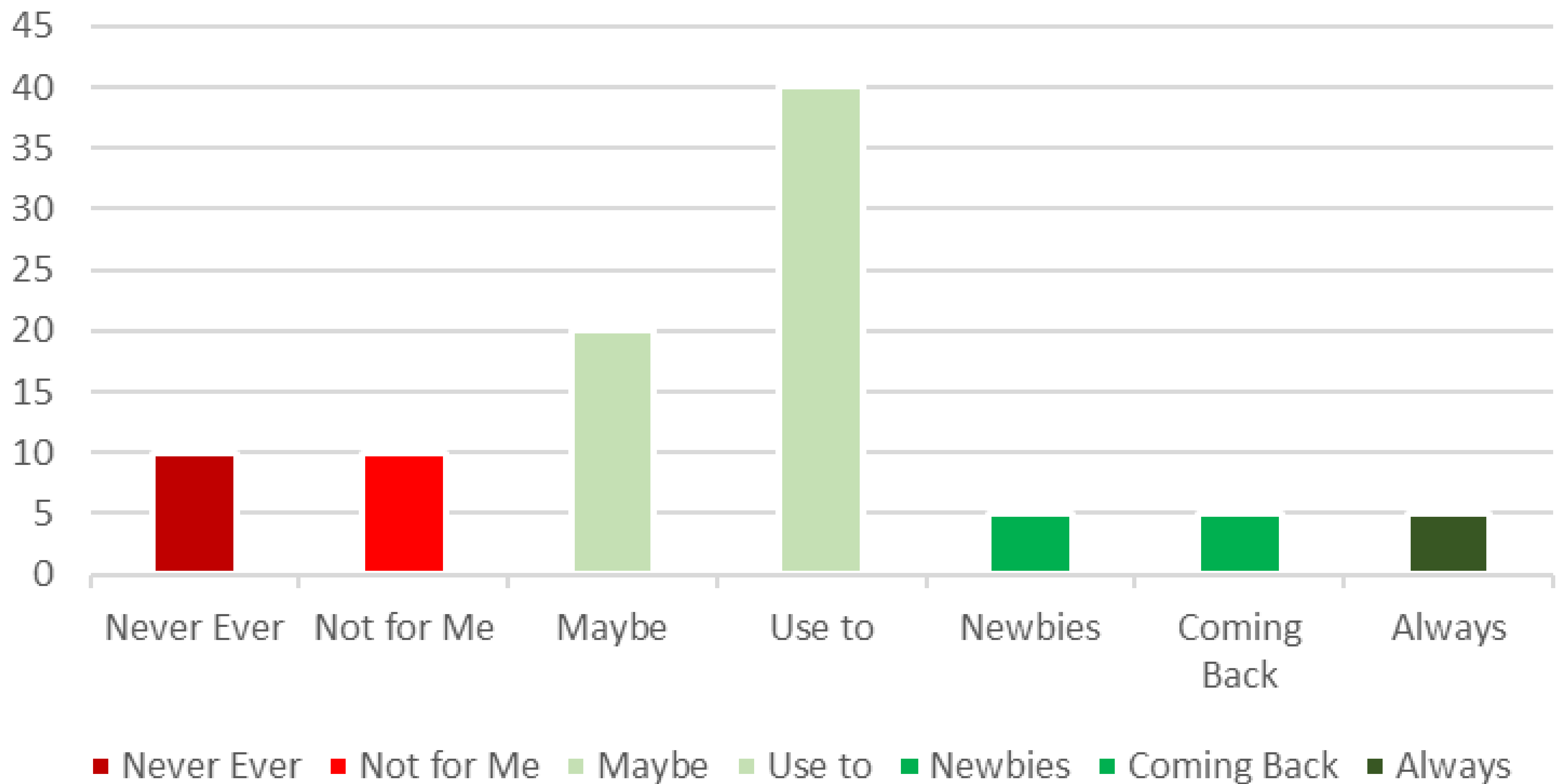
USED TO...
BUT MAYBE
I WILL IF...

NOT BEFORE...
BUT NOW I DO

USED TO...
AND NOW I GET
THE BENEFITS

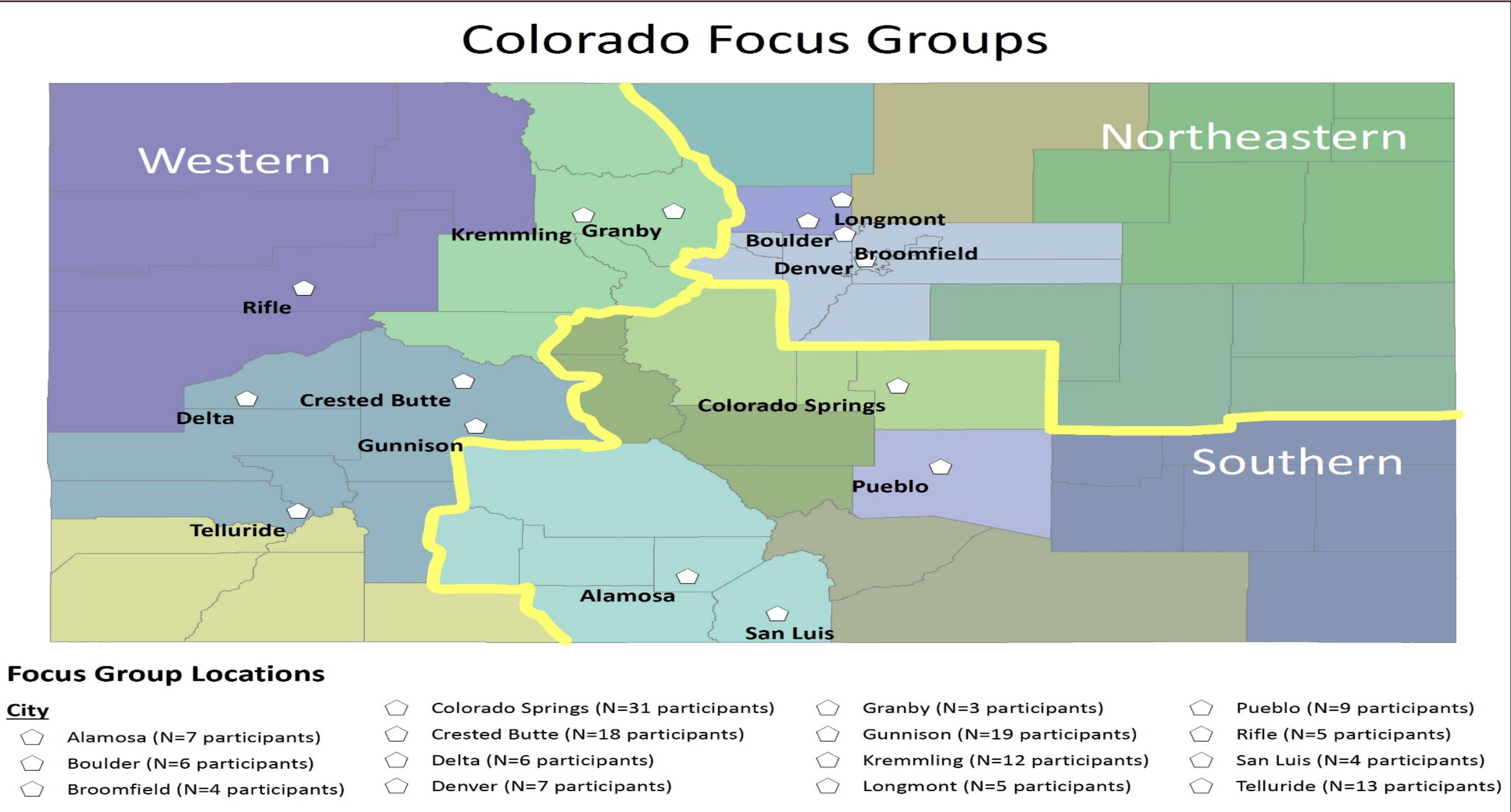
**ALWAYS HAVE,
ALWAYS WILL
IT'S ALL GOOD**

Attitudes among 65+



What are some of the unique views held by older persons?

Our goal was to identify emerging themes about cannabis use and older persons by conducting 17 focus groups across the state



We identified five themes:

- 1) older adults perceive a stigma associated with cannabis use, even if used for medical purposes
- 2) there is a lack of information about the use of cannabis for medical purposes.
- 3) substantial barriers exist to medical cannabis program.
- 4) cannabis largely is used for symptom relief (e.g., pain) and as a substitute for opioids and other medications.
- 5) persons who use cannabis only for a medical purpose prefer their own physicians but do not always use

Illinois Study

Surveys (N= 294)
31 Focus Groups (N= 258)



- *"My doctor would put it down, marijuana use. And then, move right on, 'we're not talking about that, no.'"*
- *"It's not just going to the dispensary it's going to somewhere you trust with knowledgeable people that are educated."*
- *"Went to my doctor and asked her about the whole concept about medical marijuana and immediately got shut down. She said you know that's just not something we do here."*
- *"But it was so difficult just to get it, and when you have pancreatic cancer, you have such a limited amount of time. So I think I really jumped on board as why isn't this easier? Why is it so hard to be an advocate for yourself when your doctor doesn't have any information because that is the first person you would go to?"*

The Role of Medical Providers...

**EMBEDDED IN
HEALTH
SYSTEMS**

**INDIVIDUAL
ATTITUDES &
EXPERIENCES**

**NOT TALKING
BUT
NOT IN THE WAY**

**HAPPY TO REFER
WHEN ASKED &
APPROPRIATE**

**INITIATING TALK
REGISTERED
REFERRAL**

**TIED TO
DISPENSARY OR
OTHER CLINIC**

**WHY ARE
DOCTORS EVEN
INVOLVED?**

A Clinical Profile of Older Adults who use Cannabis

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¹University of Colorado Anschutz Medical Campus, ²University of Colorado, Colorado Springs, ³University of Illinois, Urbana Champaign, ⁴University of Iowa

OBJECTIVE

To describe

- a) prevalence and patterns of marijuana use, and
- b) predictors and outcomes of marijuana use, in
Colorado adults age 65 and older

Design

State-wide survey, Self-reported health outcomes related to past year marijuana use cross-sectional paper or computer-based survey

Participants and Settings (n = 270)

Purposive sample of older adults \geq age 65 in each of Colorado's 16 Area Agencies on Aging regions; at senior centers, wellness clinics, health clinics, and marijuana dispensaries.

Methods

Logit regression of predictors of past year marijuana use (medical or recreational)

Are these “patients” really that different?

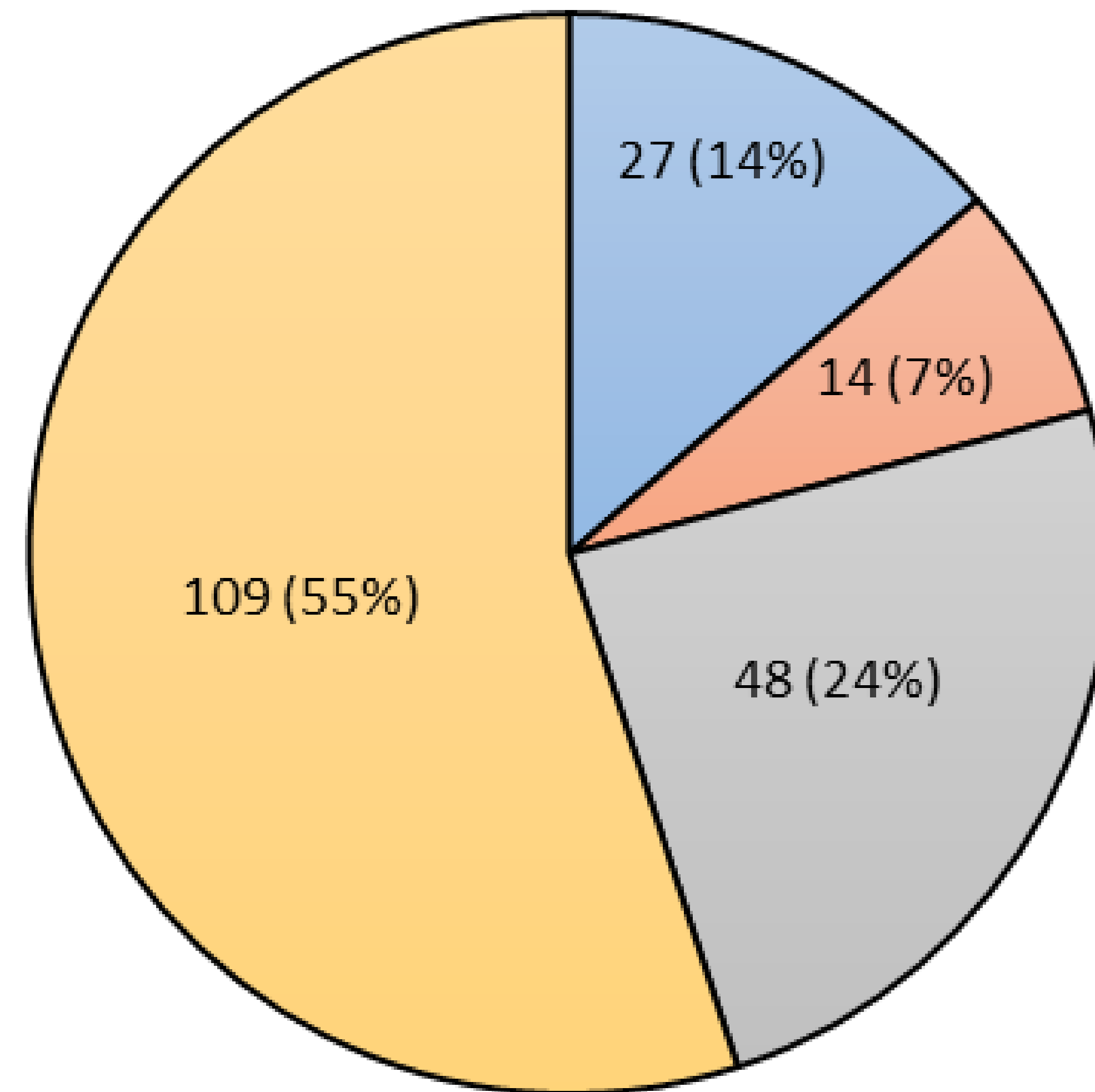
Table 2. Adjusted Odds Ratios showing odds of past-year marijuana use (N=167).

Independent Variable	Past-Year Marijuana Use, aOR (95% CI)	p-value
Age	0.91 (0.86 - 0.97)	0.00*
Female	0.44 (0.20 - 0.99)	0.04*
Some College	3.1 (0.65 - 15)	0.15
College Graduate	4.5 (0.95 - 21)	0.06
Graduate Degree	3.4 (0.80 - 14)	0.09
Divorced/Separated	0.47 (0.18 - 1.2)	0.11
Widowed	1.3 (0.45 - 3.7)	0.63
Never Married	0.96 (0.17 - 5.4)	0.96
Retired	2.2 (0.72 - 6.7)	0.16
PROMIS Global Health	0.94 (0.89 - 0.99)	0.02*
Past-year Opioid Use	2.6 (1.0 – 7.0)	0.04*
Past-year Benzodiazepine Use	0.58 (0.21 - 1.6)	0.30
Caregiver in past year	2.2 (0.80 – 6.0)	0.13

PROMIS - Patient-Reported Outcomes Measurement Information System

*p<0.05

Why are they doing it?



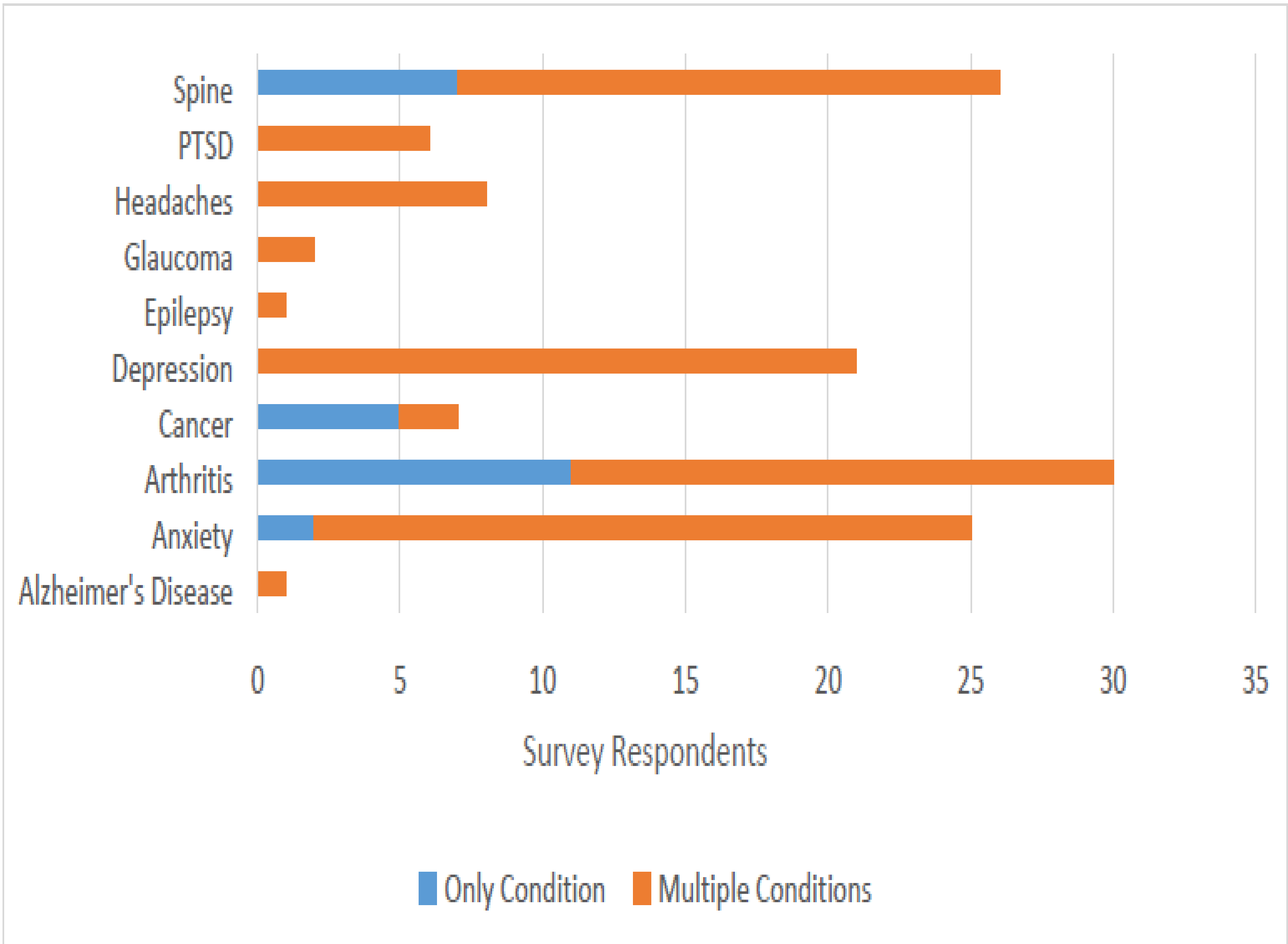
■ Medical Only
■ Both

■ Recreational Only
■ No Marijuana use

Reasons for Cannabis Use

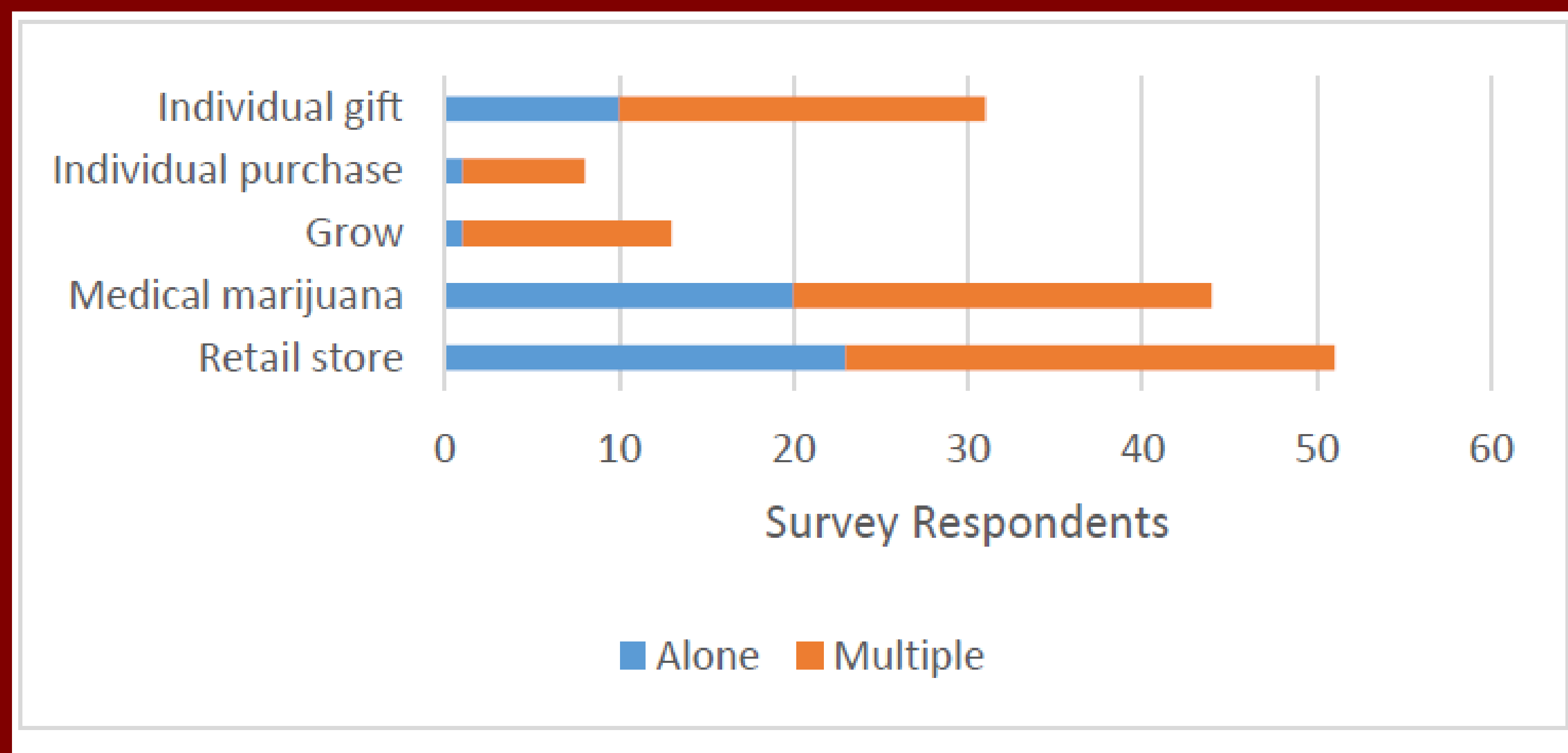
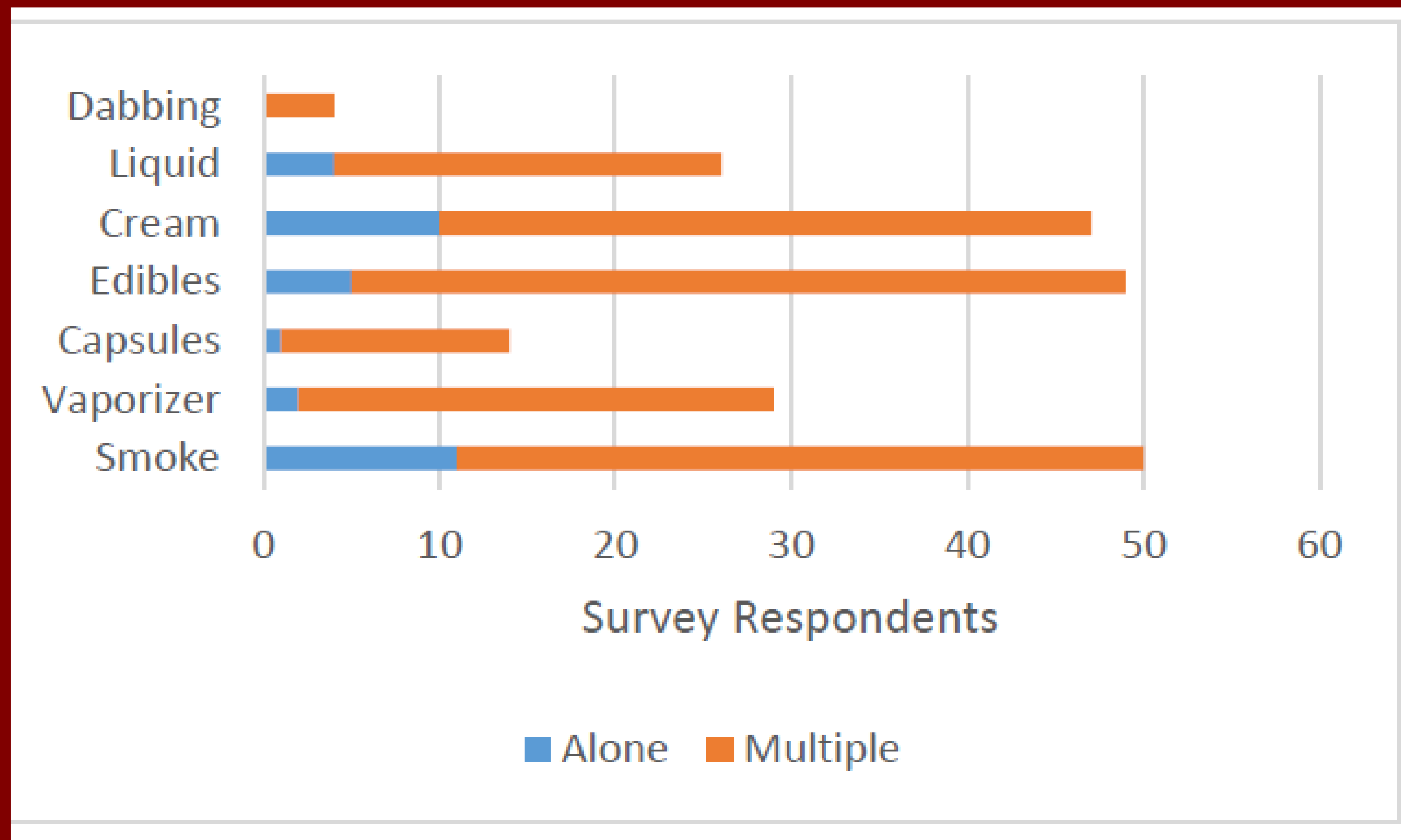
Figure 2. Reasons for and impact of marijuana use.

A. Reasons for use of marijuana.



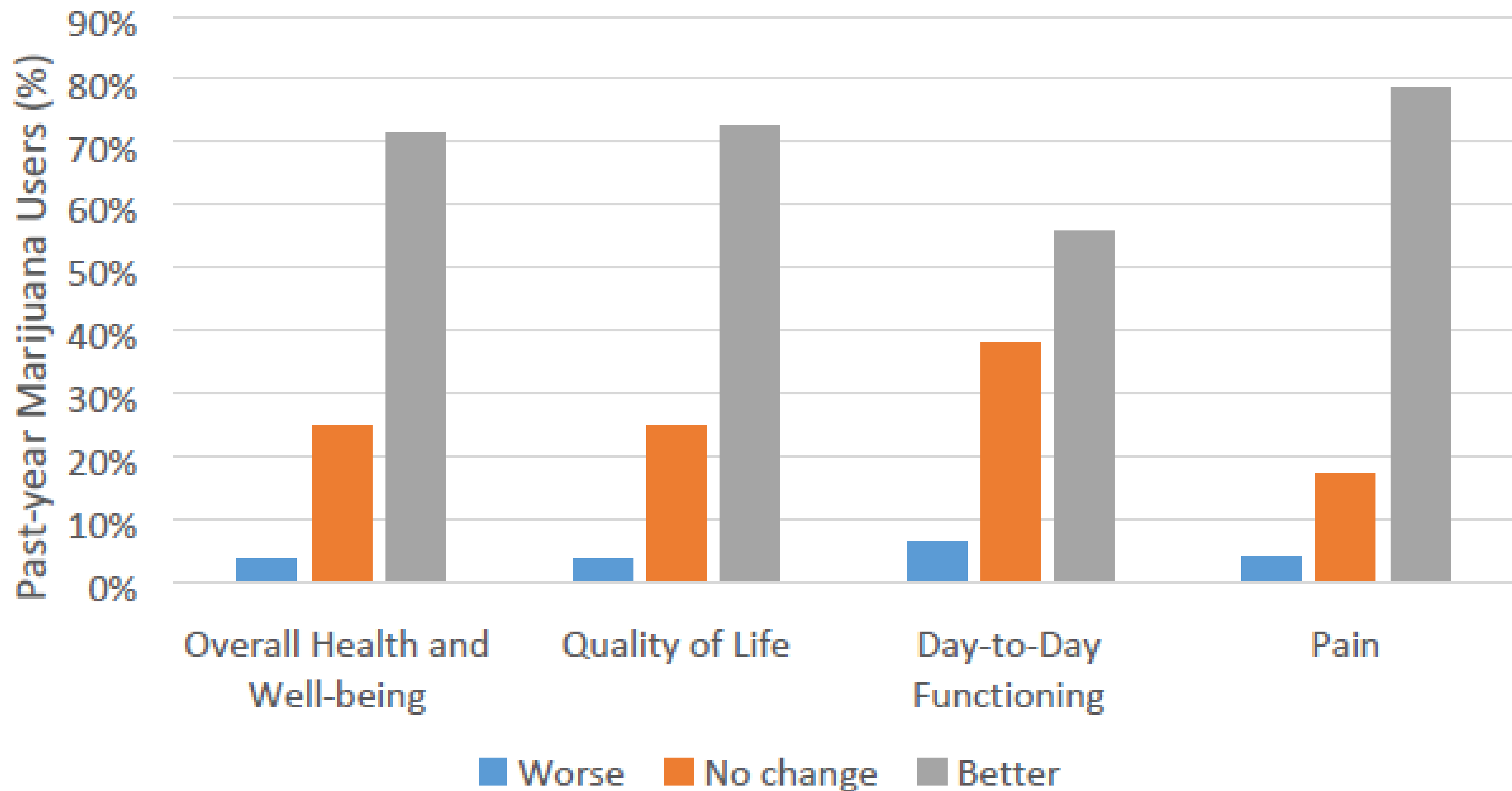
Diagnosed Condition	Percent
Anxiety	32%
Arthritis	37.3%
Cancer	8%
Depression	28%
Migraines/Headaches	10.7%
Spinal condition, including chronic back pain	34.7%
Other Diagnoses	13.3%

Just what are they doing?

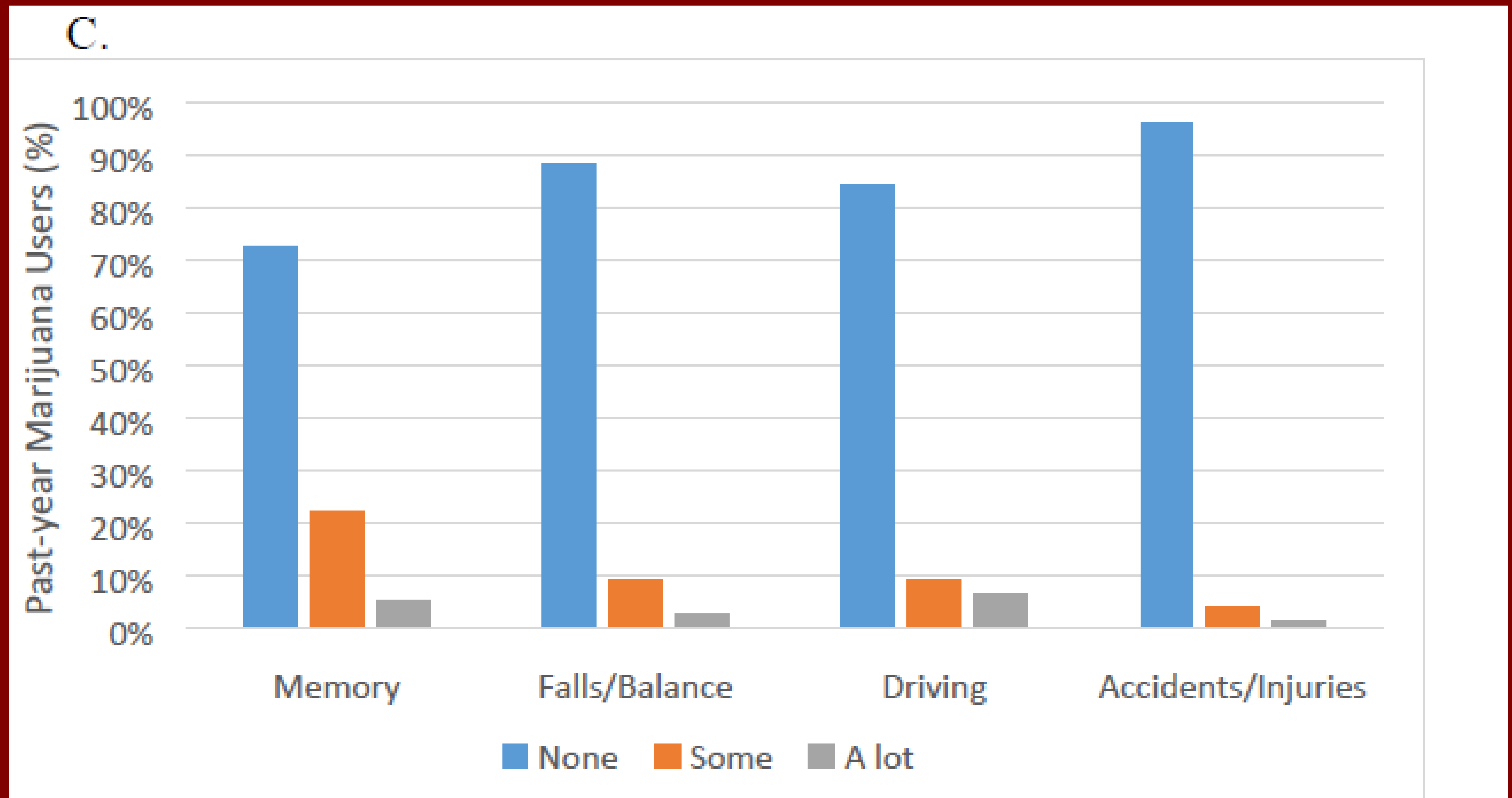


Outcomes of Cannabis Use

B. Reported impact on health outcomes.



Outcomes of Cannabis Use



DISCUSSION

- A New Paradigm
- Policy Alternatives
- Research Directions

Cannabis Use Changes w Age



Policy Alternatives

- Do we really need doctors to be involved?

Know Your Strain.

Indica Hp Hash Plant	Indica Bry Blueberry															Sativa Vor Vortex	Sativa Gws Great White Shark
Indica Gdp Granddaddy Purple	Indica Bk Bubba Kush	Indica Pk Purple Kush	Hybrid Fp Fruity Pebbles	Hybrid Mgk Mango Kush	Hybrid Bbr Blackberry	Hybrid Jil Jillybean	Hybrid Ak AK-47	Hybrid Bd Blue Dream	Hybrid Ogk OG Kush	Hybrid Ww White Widow	Hybrid Gsc Girl Scout Cookies	Hybrid Cck Cotton Candy Kush	Sativa Sd Sour Diesel	Sativa Jh Jack Herer	Sativa Caj Candy Jack		
Indica Bbk Blackberry Kush	Indica Mks Master Kush	Indica Afk Afghan Kush	Hybrid Dt Dutch Treat	Hybrid X13 XJ-13	Hybrid Tw Trainwreck	Hybrid Hb Headband	Hybrid Pt Purple Trainwreck	Hybrid Pex Pineapple Express	Hybrid Cd Chemdawg	Hybrid Che Cheese	Hybrid Lk Lemon Kush	Sativa Slh Super Lemon Haze	Sativa Sc Strawberry Cough	Sativa Mw Maui Wauai	Sativa Amh Amnesia Haze		
Indica Sky Skywalker	Indica Wr White Rhino	Indica La LA Confidential	Indica Pu Purple Urkle	Hybrid Ls Lemon Skunk	Hybrid Lem Lemon Diesel	Hybrid Nyc NYC Diesel	Hybrid Bak Banana Kush	Hybrid Bg Bubble Gum	Hybrid Tok Tahoe OG Kush	Hybrid Cp Cherry Pie	Hybrid C99 Cinderella 99	Sativa Grf Grapefruit	Sativa Hs Hawaiian Snow	Sativa Slv Silver Haze	Sativa Lb Lamb's Bread		
Indica Hk Hindu Kush	Indica God God's Gift	Indica Blk Blueberry Kush	Indica Mr Mr. Nice	Indica G13 G13	Hybrid Ago Agent Orange	Hybrid Fog Fire OG	Hybrid Whr White Russian	Hybrid Gdg Golden Goat	Hybrid Pak Pineapple Kush	Hybrid Sno Snowcap	Hybrid Pin Pineapple	Sativa Cas Casey Jones	Sativa Iss Island Sweet Skunk	Sativa Ss Super Silver Haze	Sativa Mob Moby Dick		
Indica Ok Orange Kush	Indica Ds Death Star	Indica Bw Berry White	Indica Mgo Mango	Indica Afo Afgoo	Hybrid St Sweet Tooth	Hybrid Juf Juicy Fruit	Hybrid Pd Purple Diesel	Hybrid Tnd Tangerine Dream	Hybrid Sko Skywalker OG	Hybrid Flo Flo	Sativa Har Harlequin	Sativa H Haze	Sativa Pwp Power Plant	Sativa Km Kali Mist	Sativa Ph Purple Haze		
Indica Lar Lavender	Indica Cm Critical Mass	Indica Rom Romulan	Indica Chz Blue Cheese	Indica Sen Sensi Star	Indica Nl Northern Lights	Indica Ssk Super Skunk	Indica Ga Grape Ape	Sativa Gth Ghost Train Haze	Sativa Chc Chocolope	Sativa Cah Cannalope Haze	Sativa Sns Sage N Sour	Sativa Cnx Cinex	Sativa Dp Durban Poison	Sativa Jtr Jack the Ripper	Sativa Aca Acapulco Gold		

THREE SPECIES OF CANNABIS STRAINS:

INDICA Relaxing and mellow, sedating indica effects are commonly preferred for evening use.

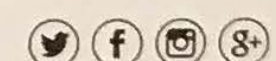
HYBRID Most strains are indica or sativa dominant hybrids that yield "best of both worlds" effects.

SATIVA Uplifting and stimulating, energizing sativa effects are commonly preferred for daytime use.

Find these strains and more on the Leafly App.



Leafly
#MYLEAF

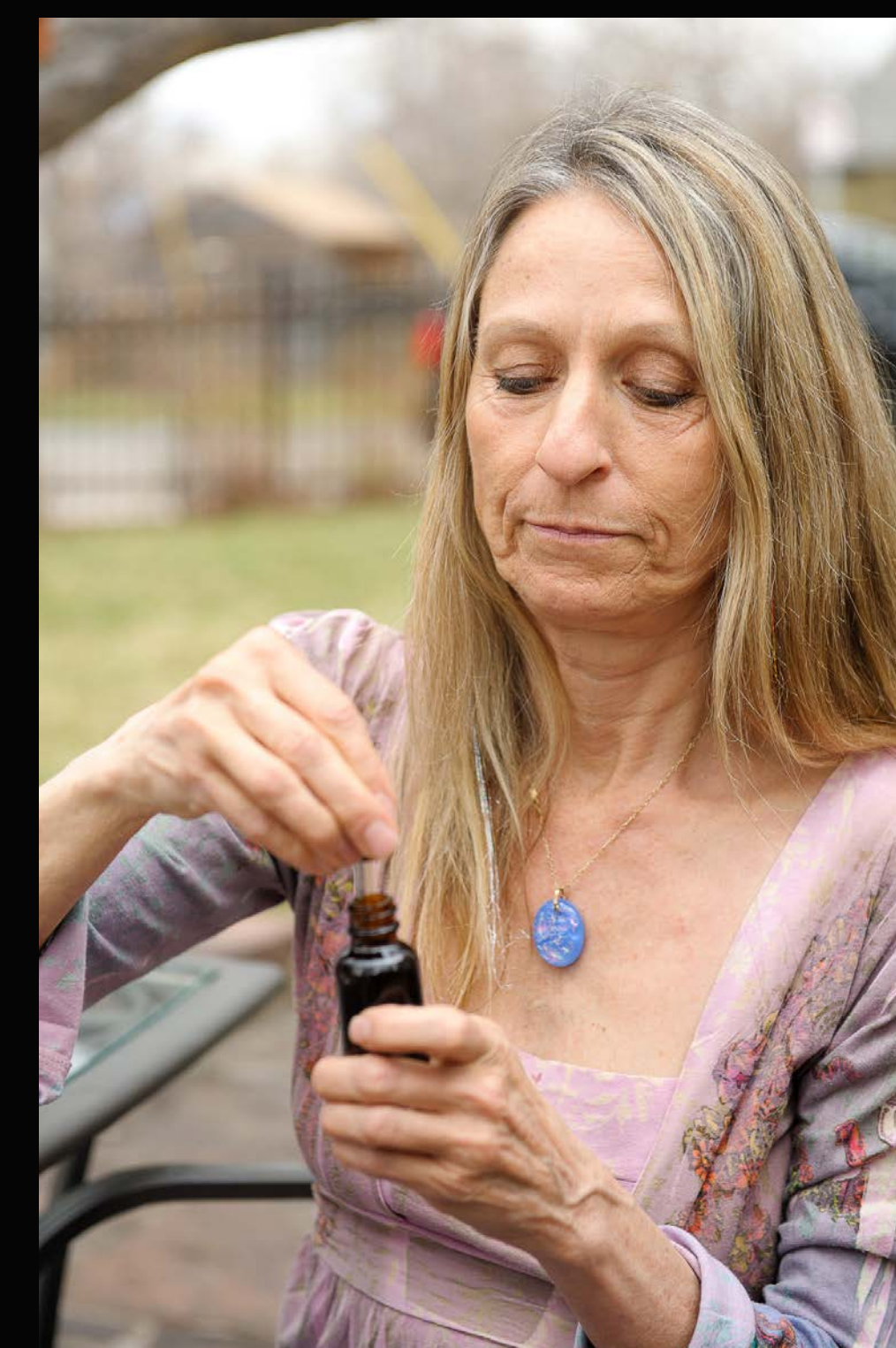
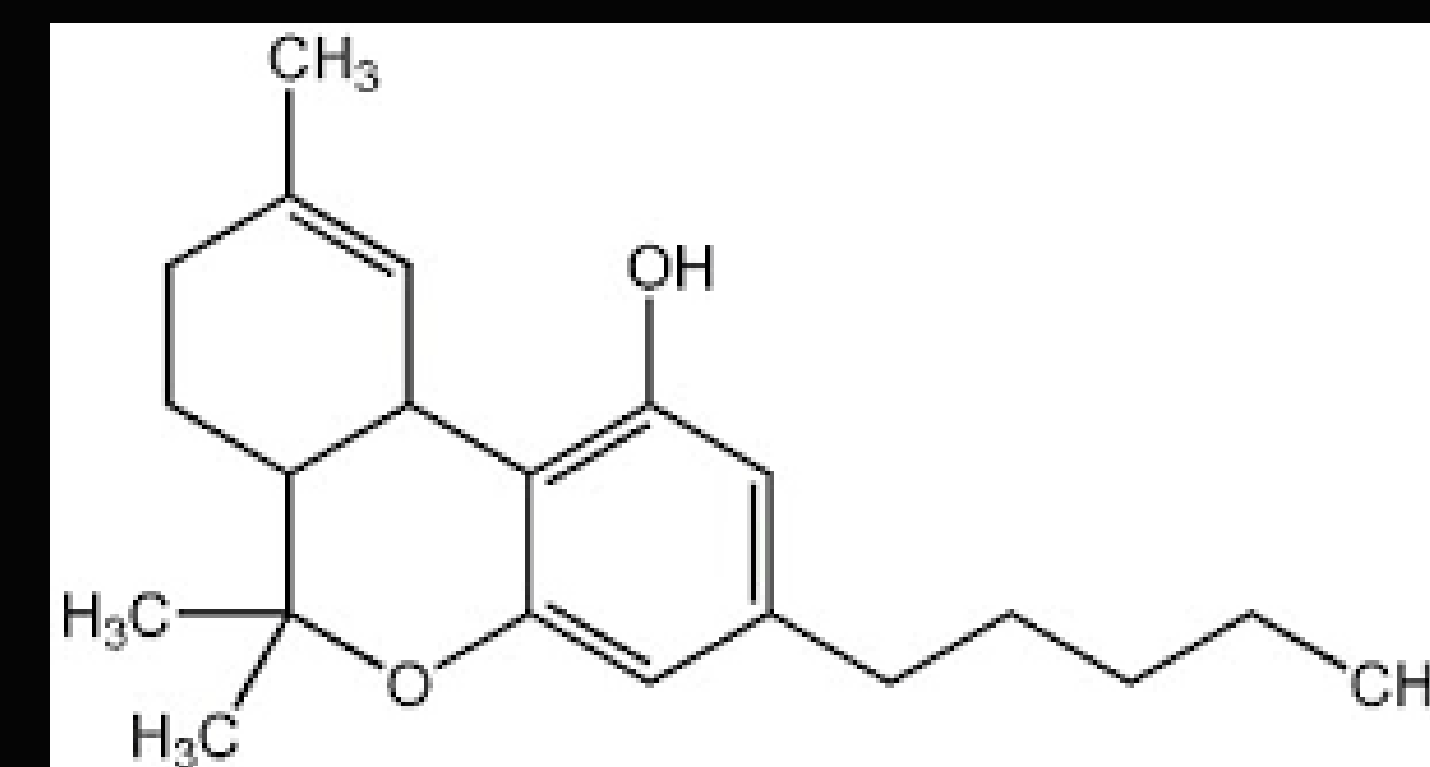
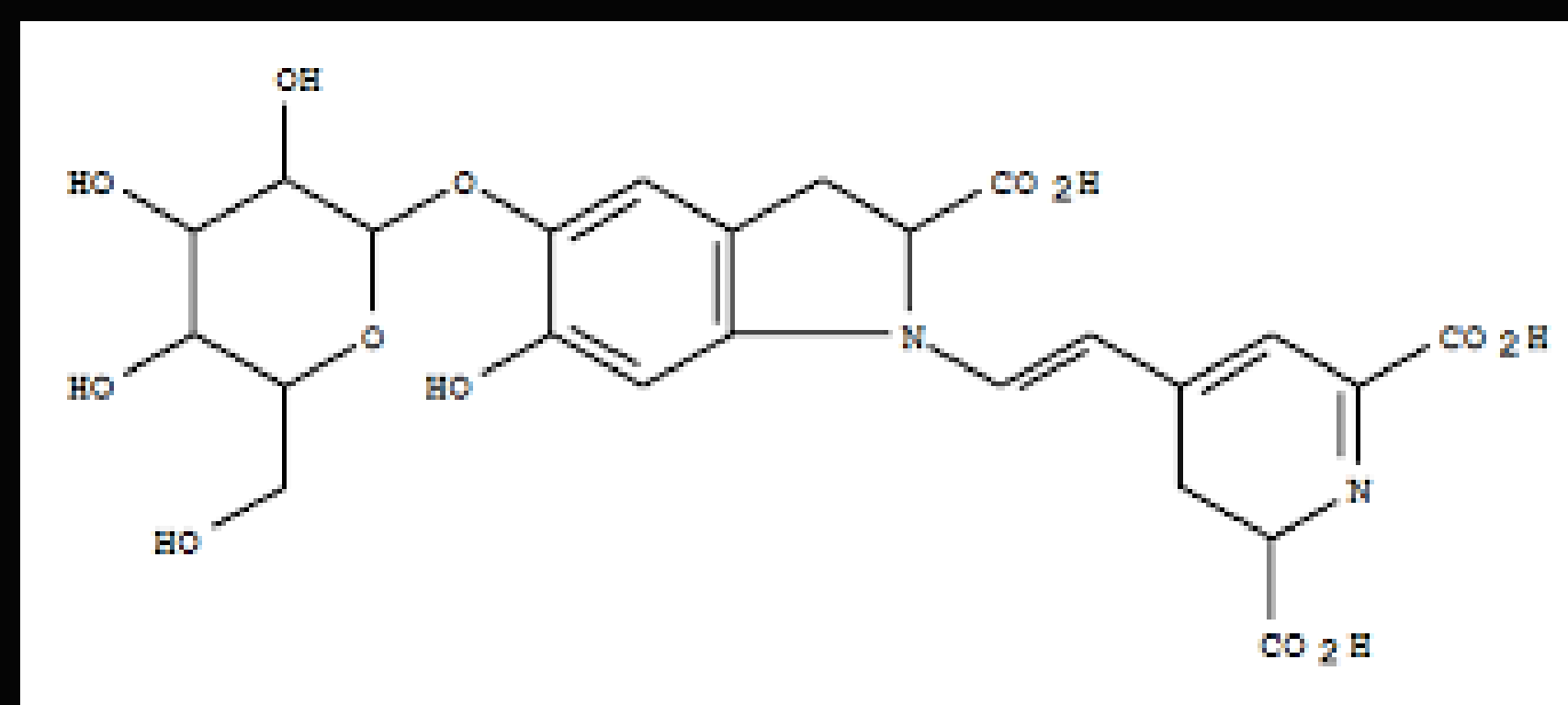
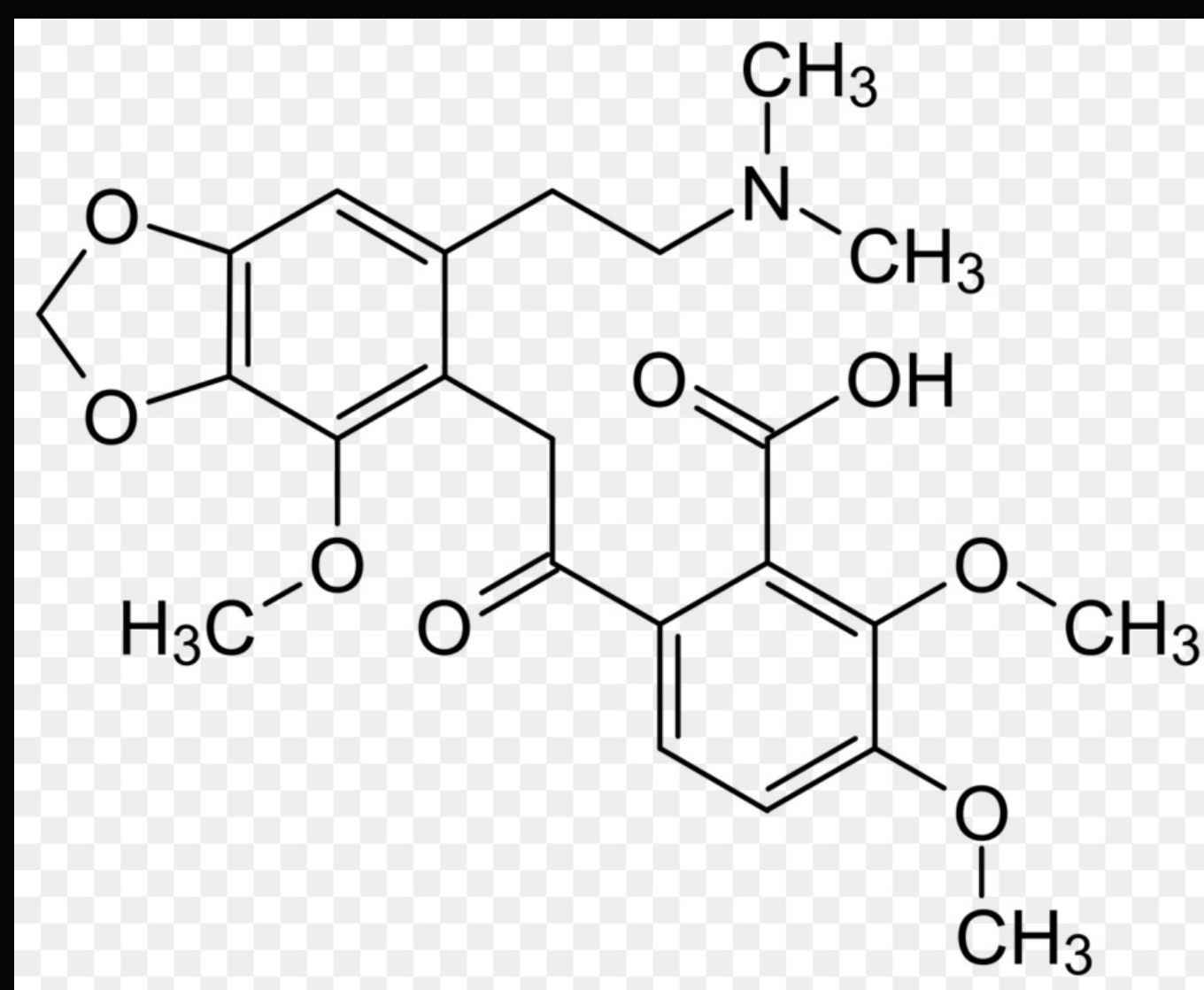


Leafly's 100 most popular strains, as determined by the number of user ratings.

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Policy Alternatives

- Do we really need law enforcement to be involved?



Policy Alternatives

- Who gets to write the rules (and make the money)?



Current Research

Opioid Substitution

Chicago Tribune

**Lawmakers In Illinois Embrace
Medical Marijuana As An Opioid Alternative**



Figure 1: State Policies, Local Implementation Efforts and Cannabis Use among Older Americans

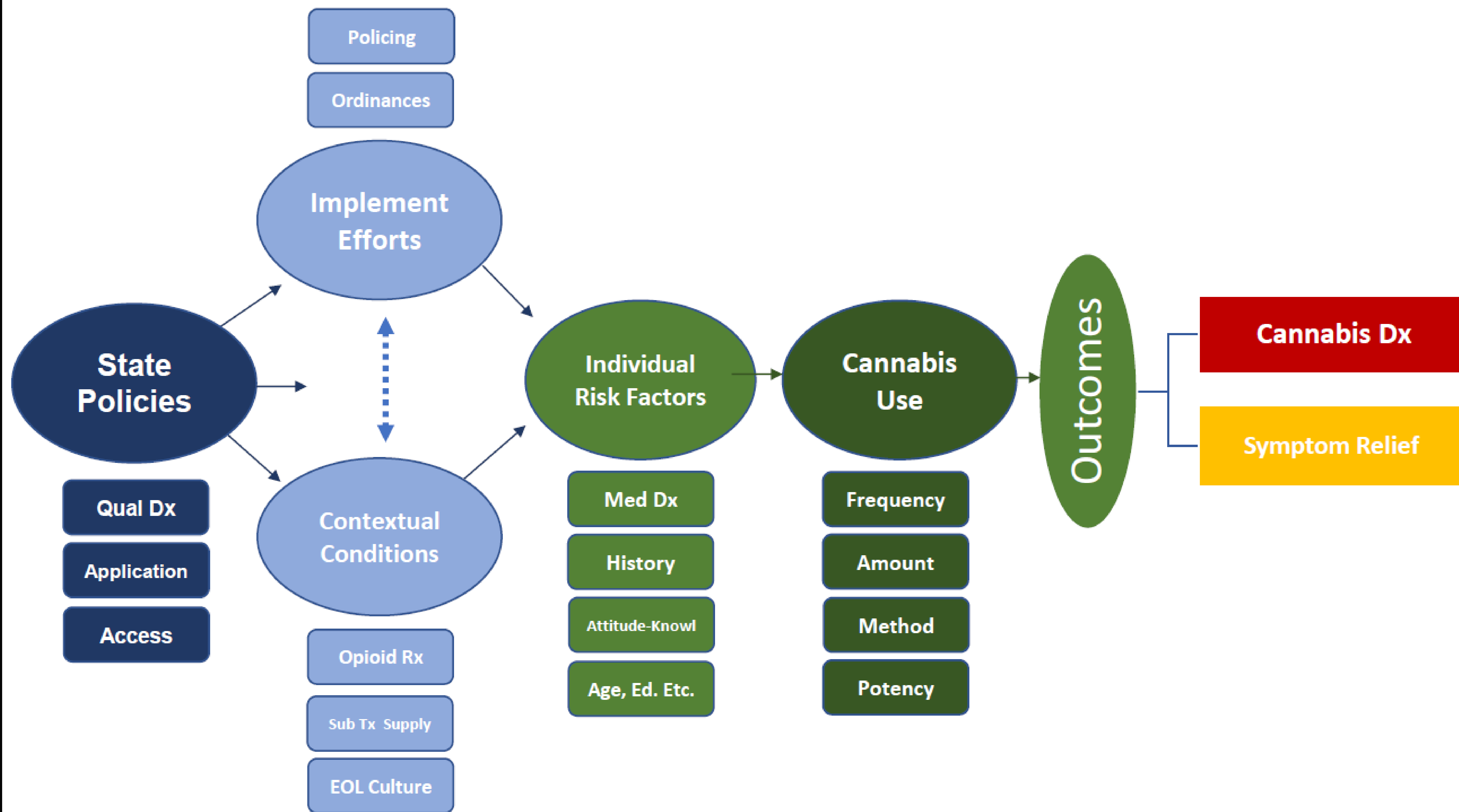


Table 1: Aspects of Statutory and Regulatory Code Pertinent to Older Adults

Codes (Examples)	Sub-Codes (Examples)		
Program Qualification	Exclusions:	Place of Residence:	Federal Nursing Facility
	Inclusion:	Clinical Symptoms:	Pain Nausea Diagnosed Conditions: Alzheimer's Disease Glaucoma
Application	Qualifying Providers: Medical Doctors:		Neurologists Psychiatrists
	Nurses		
	Processes:		Finger Printing Application Fee Renewal
Access	Home:		Delivery Cultivation
	Caregivers Product Type		Combustibles-Edibles Labeling

Survey Findings

Symptoms treated with Medical Cannabis:

Symptom:	Percent
<i>Lack of Energy</i>	10.7%
<i>Pain</i>	70.7%
<i>Difficulty sleeping</i>	46.7%
<i>Nausea</i>	12.0%
<i>Other Symptoms</i>	32.0%

Table 2: Contextual Effects

	Sub-Codes (Examples)		
Program Implementation	Access:	Number of Stores	Medical – Clinic Like Retail
	Ordinances:	Sales Limits	Hours Advertising
	Policing	Citations	Retailers Individuals
Local Conditions	General		65+ Urban/Rural
	Substance Use		Opioid Prescribing Treatment Programs
	End of Life		Advance Directives Hospice Programs

Table 3: Cannabis Use and Outcome

Use	Frequency	Daily 3-4 Month
	Method	Combustible Edible
	Product Type	Indica (Low THC) Sativa (High THC)
Outcomes	Self-Reported Negative Event	
	Health Status	Cannabis Disorder Dx Substance Use Dx Memory Wellness
	Symptom Management	Anxiety Depression Pain Nausea Memory
	Behavior	ER Use Treatment Social Engagement Exercise

THANK YOU