Cannabis and Health

Module 15: Cannabis and Aging

Lecture 3: The Bigger Picture

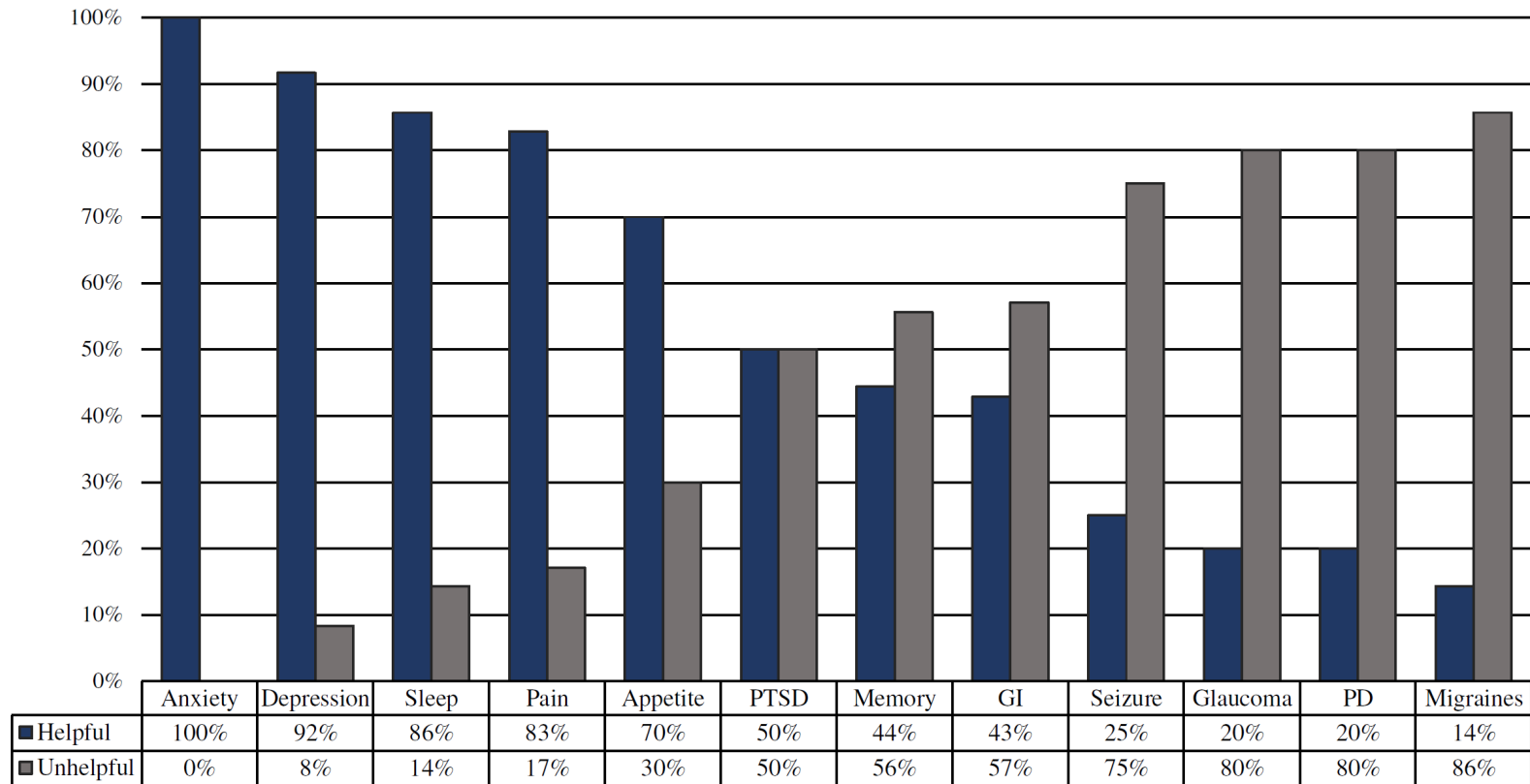# Perceptions of benefit among older adults (n=345)

Figure 1. Respondent rating of effect of marijuana on various conditions and symptoms. GI = gastrointestinal complaints including nausea, vomiting, diarrhea, constipation; PD = Parkinson's disease symptoms; PTSD = posttraumatic stress disorder.

	Anxiety	Depression	Sleep	Pain	Appetite	PTSD	Memory	GI	Seizure	Glaucoma	PD	Migraines
■ Helpful	100%	92%	86%	83%	70%	50%	44%	43%	25%	20%	20%	14%
■ Unhelpful	0%	8%	14%	17%	30%	50%	56%	57%	75%	80%	80%	86%

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6476562/

Actual benefits or risks – what do we know?

"With increased availability and use of cannabis by older adults, the benefits and risks of cannabis need to be evaluated rigorously" (Han et al., 2016; pg. 522).

Depression and Anxiety in Later Life

Depression

- Somewhat increased risk for depression; particularly for those in institutional settings

- Commonly occurs with other medical conditions (e.g., cardiovascular disease)

- Because of this, depression sometimes goes unnoticed until it starts to compromise other aspects of function (physical, cognitive, and social; Fiocco & Mallya 2015)

Anxiety

- Most common mental health problem in older people (Seitz et al. 2010)

- Causes significant impairment to quality of life

- ~10% of older adults have elevated anxiety symptoms

- Is a risk factor for depression among older adults

Cannabis for Anxiety and Depression in Later Life

- In the Reynolds et al. survey, depression and anxiety were the most common reasons older adults gave for using cannabis

- 100% reported that it helped with anxiety and 92% reported that it helped with depression

- As we learned earlier in the course, there is some evidence that cannabis may be helpful for negative mood disturbance and stress

Pain in Later Life

Percentage of Americans Who Have a Chronic Pain Condition, by Age

■ % Neck or back condition   ■ % Knee or leg condition   ■ % Other recurring pain condition
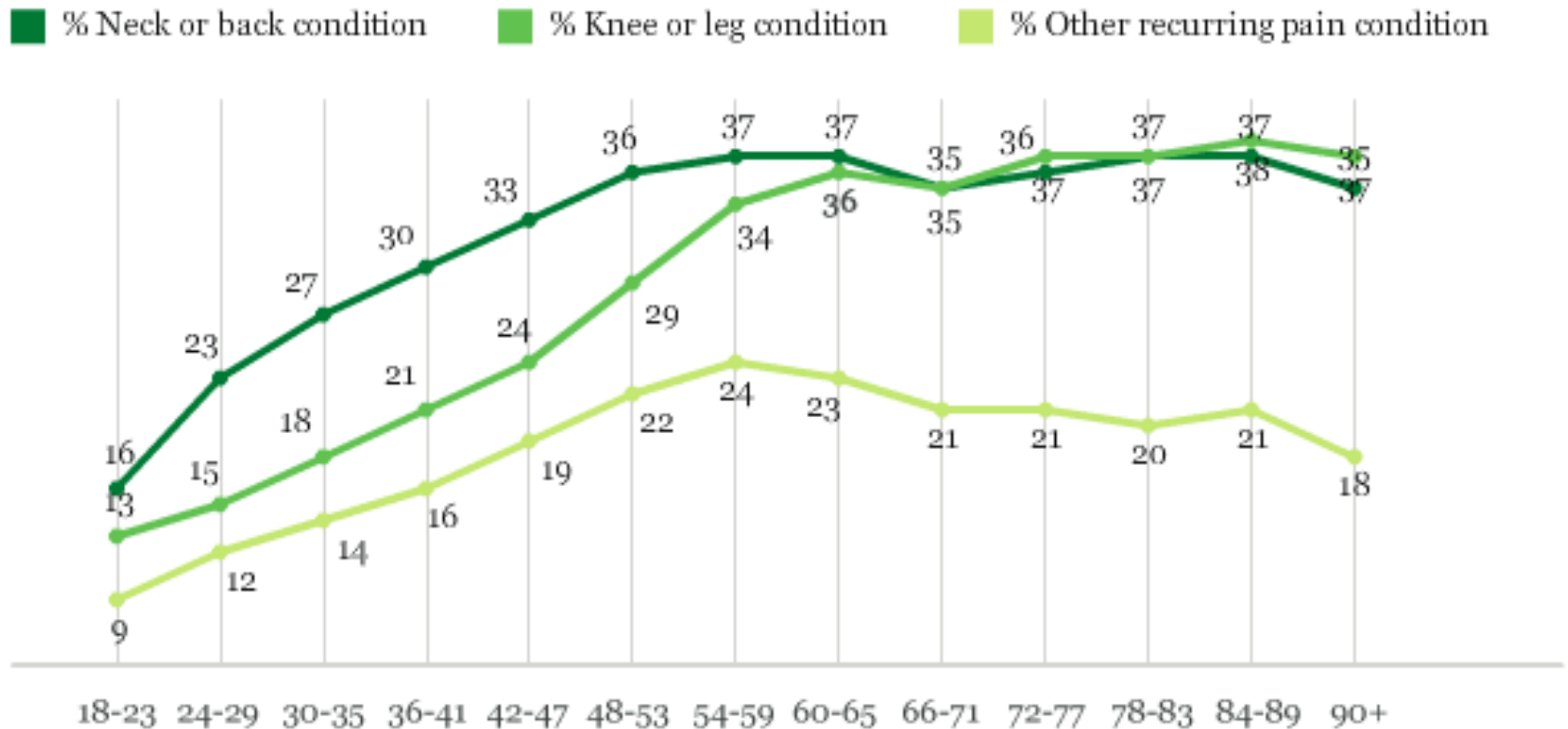
Gallup-Healthways Well-Being Index
2011

GALLUP'

Pain in Later Life

- Mechanisms of increased pain are complex
  - Though chronic inflammation (inflammageing) is clearly a piece of the puzzle
- Physiological changes in the way pain is processed as we age - the "pain system" doesn't function as well as in younger ages (Gibson & Farrell, 2004)
- Dysregulation of the hypothalamic-pituitary-adrenal axis and in autonomic function are also associated with age-related changes in pain (Yezierski, 2012)

Changes to Sleep in Later Life (Mander et al. 2017 review)

(1) earlier bedtimes and rise times

(2) longer time taken to fall asleep

(3) shorter overall sleep duration

(4) increased sleep fragmentation

(5) more fragile sleep (i.e., higher likelihood of being woken by external sensory stimuli)

(6) reduced amount of deeper NREM

(7) increased time spent in lighter NREM stages 1 and 2

(8) shorter and fewer NREM-REM sleep cycles

(9) increased time spent awake throughout the night

Overlapping problems

- Poor sleep is associated with and can even LEAD to
  - Pain
  - Depression
  - Anxiety
  - Physical inactivity

- Poor sleep can be exacerbated by medications

- Thus treating poor sleep is critical

Cannabis for Sleep in Later Life

- Recall, THC decreases latency to sleep (a problem for older adults), but in higher doses it can interfere with sleep

- CBD can have a positive effect on sleep, but it has to be high levels of CBD (>100mg)
    - No evidence that it is harmful

- Need much more research

Polypharmacy and Aging: An underappreciated problem

- Polypharmacy: the use of multiple medications (sometimes defined as 5 or more)

- Very common in older adults; rates are highest among older adults in nursing homes

Polypharmacy and Aging: An underappreciated problem

- Associated with:
  - increased mortality
  - falls (broken hip is often fatal)
  - adverse drug reactions
  - increased length of stay in hospital
  - faster readmission to hospital after discharge
  - increased negative drug-interactions
  - medication non-adherence
  - decreased functional capacity
  - multiple geriatric syndromes

- As many as 50% of all older adults are on at least one unnecessary medication (Maher et al., 2014)

What conditions are drugs prescribed for?

- High cholesterol, heart disease, high blood pressure, diabetes, thyroid problems, chronic conditions

- Pain – acetaminophen, NSAIDs, tramadol, opioids (including fentanyl), steroids, antidepressants, anticonvulsants

- Depression – antidepressants (but these tend to work less well in older adults and can cause abrupt drops in blood pressure = falls)

- Anxiety – antidepressants (see risks above), anti-anxiety medications (including narcotics like benzodiazepine, but these can cause memory problems, unsteadiness, and falls), beta-blockers

- Sleep - benzodiazepines (see risks above), antidepressants (see risks above)

Considering Cannabis and Polypharmacy

- If it is true that cannabis has utility for a number of conditions that older adults suffer from
  - Pain
  - Sleep problems
  - Depression
  - Anxiety

- Then cannabis may have the potential to take the place of as many as four different classes of medication
  - This needs to be factored in to the risk:benefit assessment

Summary

- Some abilities are conserved and even get better as we age (verbal fluency, knowledge)

- Most functional domains get worse as we age, but the best way to maintain function and slow the decline is being physically active
  - Cannabis may have the potential to assist older adults in staying active

- With aging come a number of problems that are often treated with multiple medications
  - Cannabis may have the potential for beneficial effects across a number of domains with fewer side effects
  - Might help to curb problem of polypharmacy in older adults

- Research on cannabis use in older adults is crucial to bring empirical evidence to bear on these questions