

Clearing the Smoke on Misconceptions of Medical Marijuana

A focus on Older Adults

“We didn’t have any large double-blind studies of penicillin until the mid-60s, so it was all anecdotal evidence. But it came across as a wonder drug. And it was.” – Lester Grinspoon, 87, an Associate Professor Emeritus of Psychiatry at Harvard Medical School

Introduction

The increasing number of states legalizing medical marijuana in the U.S., and the use of the plant as a possible alternative to pharmaceutical drugs, offering relief to those who suffer from chronic conditions, has brought the topic back to the lime light. Several studies have shown that medical marijuana is an effective treatment for various illnesses, and many researchers believe that it has a greater potential to expand its treatment to disorders such as, Alzheimer’s disease, Parkinson’s disease, cancer, and post-traumatic stress disorder. However, research is being held up by DEA classification of marijuana as a Schedule I drug, indicating that it has no medical value and is a danger to public health, which leaves researchers without the ability to have double blind studies and encourages the use of mice as test subjects.

This issue brief attempts to clear up many of the misconceptions about medical marijuana,

such as addiction and harmful side effects.

Additionally, we discuss research findings that focus on chronic diseases most common among the 65 and older population, including: Alzheimer’s and Parkinson’s disease, arthritis, cancer, osteoporosis, glaucoma, and depression. We conclude with a discussion of the possible reasons behind the decision for the DEA to oppose the legalization of marijuana.

Cannabinoids: More than just THC

A main concern regarding the use of medical cannabis is the possible psychoactive affect, which comes from one of the cannabinoids (chemical compounds) found in cannabis known as tetrahydrocannabinol (THC). However, THC is only 1 of 85 types of cannabinoids found in cannabis. Another type of cannabinoid, cannabidiol (CBD), is a non-psychoactive molecule that has been shown to provide relief to an array of symptoms associated with pain, gastrointestinal disorders,

and neurological disorders. Different cannabinoids have different effects depending on which receptors they bind to in the body. Both THC and CBD are not foreign compounds being introduced to the bodies, rather they imitate compounds that our bodies naturally produce, called endocannabinoids. These compounds, whether endogenously produced by the body or supplied from the cannabis plant, are activated to maintain internal stability and health.

Other concerns are the potential for addiction and harmful side effects from medical cannabis. The results regarding addiction from using marijuana are mixed. The worst side effects come from smoking cannabis with THC, such as dry mouth, dry/red eyes, nausea, dizziness, blood pressure problems, hallucinations, and impaired mental functioning. Prescription drugs, on the other hand, can be just as (or even more) addictive as medical cannabis and they are more likely to have many harmful side effects. For example, a prescription drug called Razadyne is used to treat dementia. The list of side effects can be more serious than the condition being treated

(<http://www.webmd.com/drugs/2/drug-93285/razadyne-oral/details#uses>). Some of the side effects include: seizures, black/bloody stool, vomit that looks like coffee grounds, abdominal pain, severe dizziness, blurred vision, depression, insomnia, and loss of appetite. Although such side effects might not

be as serious for a younger, healthier adult, it can be the difference between life and death to a frail older adult.

Polypharmacy: The Other Drug Problem

Across the nation nearly 50 percent of older adults are taking upwards of 10 different medications to treat chronic illnesses. This phenomenon is known as polypharmacy. Unfortunately, with polypharmacy comes an increased risk for negative health outcomes, such as dangerous drug interactions from lack of geriatric education in medical schools and communication between physicians, also higher healthcare costs due to hospitalization from drug-related complications. For example, many prescription drugs act differently in older patients than younger ones. A drug that has a long half-life will last even longer in the older patient. With only 7 percent of physicians trained in geriatrics, it can be easily overlooked when prescribing medications to older patients. The Institute of Medicine study (2006) found that there were at least 400,000 preventable adverse drug events every year in hospitals, which resulted in pushing up health care costs annually by approximately \$3.5 billion.

So how might medical marijuana help to reduce the number of medications prescribed to older patients? Bradford and Bradford (2016) examined how implementing state-level medical marijuana laws changes prescribing patterns and patient expenditures in Medicare Part D for FDA-approved prescription drugs.

They found that in states where medical marijuana was legal, physicians gave out 4,593 fewer prescriptions for the conditions in the study (anxiety, depression, nausea, pain, psychosis, seizures, sleep disorders, spasticity), and 1,826 fewer prescriptions specifically for pain medications annually per physician. Other findings show that Medicare Part D spending, for both program and enrollee spending, fell by \$104.5 million in 2010. In addition, the cost savings had risen to \$165.2 million by 2013. Overall, they suggested that if all states had implemented medical marijuana laws the total savings to Medicare Part D would have been \$468.1 million.

Medical Marijuana for Various Age-Related Diseases

Alzheimer's and Parkinson's disease. A review of current scientific studies shows that it is possible for medical cannabis to provide symptomatic relief to patients afflicted with Alzheimer's and Parkinson's disease and may moderate the progression of both diseases. So far, CB1 and CB2 cannabinoid receptors have been isolated for treatment because targeting them may reduce neuro-inflammation and impaired memory without causing psychoactive effects (Campbell and Gowran, 2007).

Pain Management. Medical marijuana has the potential to help to reduce pain because it binds to receptors, which blocks out discomfort. Currently, around 10 percent of Americans use marijuana to control pain (Journal of Pain,

2011). A study of adults age 50 and older found that those living in states where medical marijuana is legal had reduced rates of pain and work interference due to pain (Nichols, 2016).

Arthritis. Joints naturally produce cannabinoids, but over time with arthritis, their ability to do so declines. Injecting cannabinoids can decrease some of the pain, inflammation, and degeneration caused by arthritis and joint damage cause by osteoarthritis (Annals of the Rheumatic Diseases, 2016; Biological & Pharmaceutical Bulletin, 2011). A review of 18 studies of the medical use of cannabinoids found that it was safe and modestly effective for rheumatoid arthritis and fibromyalgia (British Journal of Clinical Pharmacology, 2011). Medical marijuana has also been found to improve sleep, which is a common issue among those with arthritis.

Cancer. Marinol, which the DEA describes as the existing legal form of medical marijuana, was developed to alleviate cancer treatment side effects. Marinol is metabolized by the body very quickly and only 10-20 percent of the oral dose actually reaches systemic circulation. By contrast, medical marijuana that is smoked is rapidly absorbed by the body and more of the medicinal compounds actually reach the body's systemic circulation. Marinol also has several precautions and side effects including seizure disorders, problems with patients who have had heart problems, mental health problems,

and issues with substance abuse (Mirinol.com, 2016). Trial studies have indicated that medical marijuana increases appetite and reduces nausea with few side effects.

Osteoporosis. With osteoporosis, the body makes too little bone, the body loses bone, or both (NOF.org, 2016). One in two women and one in four men will break a bone by age 50 due to osteoporosis (NOF.org, 2016). Medical marijuana injections could help stop bone loss due to osteoporosis.

Glaucoma. Glaucoma is caused by damage to the optic nerve due to increased eye pressure (National Eye Institute, 2016). Studies have found that medical marijuana reduces pressure inside eye relieving discomfort for three to four hours. However, other drugs currently available might relieve pain for longer.

Depression. Between 1 percent and 5 percent of older adults are depressed. The research on medical marijuana and depression are mostly based on non-human subjects. It has been found to reintroduce cannabinoids into the brain of rats, which helps to replenish depletion. Views are mixed whether medical marijuana leads to depression or if it treats depression (Lev-Ran, 2014). Another concern about using medical marijuana to treat depression is that it may trigger psychosis in people with a higher risk of those conditions (Baker, 2010).

Florida and Amendment 2

In 2014, Florida Governor Rick Scott signed into law the “Charlotte’s Web” medical marijuana bill which allows physicians of children with epilepsy or other debilitating conditions to prescribe low-THC, high CBD medical marijuana in oil or vapor form. Many in the state are advocating for the use of medical marijuana for older individuals who also have debilitating conditions.

Amendment 2 would allow for the use of medical marijuana for debilitating medical conditions. Use would only be allowed for those who are eligible as determined by licensed Florida physicians as having one of the following debilitating conditions: cancer, epilepsy, glaucoma, HIV, AIDS, post-traumatic stress disorder, ALS, Crohn’s disease, Parkinson’s disease, and multiple sclerosis. Physicians must perform a physical examination and full medical assessment of the patient and verify that the use of medical marijuana would outweigh the risks and determine the length of use. Patients would be issued identification cards by the Department of Health (DOH) to be used at dispensaries. The development of medical marijuana food, tinctures, aerosols, oils, or ointments would be regulated by DOH. The amendment would allow a qualified caregiver who has been issued an identification card by the DOH to assist patients administer medical marijuana. A physician can only certify a minor with their legal guardian’s consent.

The amendment language clearly states that it will NOT allow for violation of any law, affect or repeal laws that relate to non-medical use, allow use by anyone other than qualified patients, permit operation of any vehicle while under the influence, shall not require correctional, education, or workplace facilities to accommodate use, nor require medical insurance providers to pay for medical marijuana.

A vote of “Yes” would allow for the use of medical marijuana as summarized above.

What’s Blocking Research and Helping Older Adults?

Several organizations support medical marijuana such as, the American Nurses Association, National Academy of Sciences Institute of Medicine, American Cancer Society, and the American Medical Association. In addition, in a 2015 Gallop poll, 70 percent of those polled favored making it legal for doctors to prescribe marijuana in order to reduce pain and suffering. With reputable organizations and a majority of people favoring making medical marijuana legal, why such opposition?

One reason is due to fear and misunderstanding about the consequences of allowing medical marijuana, including making it easier for kids and teens to access the drug, driving while under the influence, and abuse. Studies in Colorado and Washington have shown that since medical marijuana was legalized, teen rates of use have been

unchanged (Monitoring the Future Survey, 2015). In Colorado, there has been a slight increase in ER visits of children under 9 from accidental ingestion, but ERs and poison control centers are far more likely to see children who have ingested other substances like laundry detergent or crayons (Washington Post, 2016). Safety precautions can keep kids away from medical marijuana much like parents keep children away from flavored over-the-counter medicine. Furthermore, arrests in those states for marijuana have declined significantly (but not for racial/ethnic minorities), saving the system millions of dollars. Traffic fatalities have also remained largely unchanged. Regarding the potential for abuse, Wallace (2015) recommends that patients should be monitored, have routine follow-ups to assess progress with treatment.

On the other hand, prescription opioids can be dangerous or even deadly for people of all ages. Currently, there are enough opioids prescribed each year to put a bottle in every household. Opioids can be dispensed as pills, patches or a flavored lollipop. The rate of children hospitalized for opioid poisoning increased 165 percent from 1997 to 2012, and the rate of toddlers being hospitalized has more than doubled (NPR, 2016). Overall, opioid-related fatal poisonings have quadrupled over the last two decades (CDC, 2011). In 2010, prescription opioids were responsible for almost 60 percent (16,651) of all deaths due to drug overdoses in the U.S. (Jones, Mack, and

Paulozzi, 2013). By contrast, there has never been a reported overdose due to marijuana (medical or otherwise).

Another barrier is marijuana's classification. Marijuana is classified as a Schedule I drug—in the same class as heroin. This classification makes it difficult for any research to be conducted on the drug. In August of this year, the DEA once again rejected the opportunity to reschedule marijuana to a Schedule II drug—a classification that would allow for more research. As Ingraham of the Washington Post explains, “The FDA has never approved whole-plant marijuana as a drug... most drugs the FDA approves of are individual chemical compounds, not plants. Penicillin is an FDA-approved drug, for instance. The mold it's derived from is not.” He goes on to say that, “... the DEA cannot change the legal status of marijuana unless the FDA determines it has a medical use. The FDA cannot determine it has a medical use in part because of the highly restrictive legal status of the drug.”

Pharmaceutical companies also stand to profit from marijuana's classification. Insys Therapeutics, for example, is the maker of a synthetic THC drug and has recently contributed \$500,000 to oppose legislation in Arizona that would allow for full legalization.

Some states have enacted their own laws regarding marijuana that largely support physicians' standpoints that medical marijuana is beneficial to their patients. Other suggestions

include keeping marijuana as a Schedule I drug, but allow for a caveat that it can be used for research or amend the Controlled Substances Act.

Conclusion

The miseducation about medical marijuana over the last 50 years has been detrimental to the progression of research regarding the effects it may have on countless diseases. With a rapidly aging population comes an increase in chronic disease. If there is a chance that medical marijuana is as versatile and inexpensive, as some of the recent studies have shown, and able to provide relief from the national epidemic of prescription painkiller overdoses, then the people with these debilitating diseases deserve an alternative. However, until the DEA changes medical marijuana from a Schedule I drug, researchers will continue to face multiple hurdles in trying to understand its benefits.

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