Medical Marijuana: A Physician's Dilemma

Abstract

Marijuana is one of the most commonly used drugs in the United States, and about 60% of Americans support the legalization of marijuana use. Currently, 29 states and the District of Columbia have legalized medical marijuana use. However, the legalization of medical marijuana at the state level has left physicians with a dilemma. Physicians now face a conflict between federal and state marijuana laws, a lack of education on dosage of marijuana, and inadequate evidence to support prescribing decisions. This article outlines the barriers facing physicians regarding medical marijuana, and offers a way forward for researchers and regulators.

Keywords: Marijuana; Cannabis; Medical Marijuana; Physician

Opinion

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Abbreviations: DEA: Drug Enforcement Agency; THC: Tetrahydrocannabinol; COPD: Chronic Obstructive Pulmonary Disease

Introduction

Marijuana is the most commonly used federally controlled, and therefore illicit, drug in the United States [1,2]. Use of most illicit drugs in the United States has either stabilized or decreased in the past decade, but marijuana use has increased and is the primary contributing factor to the overall increase in illegal drug use [1]. Estimates of the past year and past 30-day prevalence rate of marijuana use range from 9.5% to 23.7% and 8.3% to 14.0% respectively, depending on the study [3-5]. About 60% of the United States population supports legalization of marijuana [6].

Currently, 29 states and the District of Columbia have passed laws legalizing some form of marijuana use, with 8 states and the District of Columbia having legalized the recreational use of marijuana [7]. Despite state level changes, the federal Drug Enforcement Agency in conjunction with the Food and Drug Administration, decided in 2016 not to remove marijuana from its listing as a Schedule I drug [8]. However, federal prosecutors have been instructed not to spend time prosecuting those who use or sell marijuana when legal by state law [9]. With large amounts of taxable profit in this legal climate, large medical and recreational marijuana dispensaries have grown across the nation resulting in increased access to marijuana.

According to the California Behavioral Risk Factor Surveillance System 2012, the prevalence of medical marijuana use was 5% among adults, with most users reporting using for perceived therapeutic benefits to alleviate symptoms or treat certain medical conditions. There were no significant differences in the prevalence by gender, education or region [10]. A recent report by the National Academies of Sciences, Engineering, and Medicine on the health effects of cannabis and cannabinoids indicated that to date, there is substantial evidence of effectiveness of cannabis or cannabinoids in the treatment of chronic pain, spasticity in multiple sclerosis and chemotherapy induced-nausea and vomiting, moderate evidence in improving short-term sleep outcomes and limited evidence in improving appetite among AIDS patients, anxiety and Post Traumatic Stress Disorder [11]. Psychiatric conditions such as Tourette syndrome, depression, and schizophrenia have weak evidence linking marijuana to improvement [12,13]. In contrast, many studies have shown associations between marijuana use and negative health outcomes including a potential risk for cannabis dependence, anxiety, depression, schizophrenia and psychosis and/or mania [13].

Public opinion surrounding marijuana use over the past 15 years has changed as evidenced by the legalization of both medical and recreational marijuana use in numerous states [14]. While many states were legalizing marijuana use, the public's perception of marijuana use was changing. Coloradans, for example, perceived a lower risk of marijuana use and increased their past year use compared to those living in "non-medical marijuana states" [15]. Regardless of state of residence, users perceive marijuana to be less likely to cause social and academic harm compared to the perceptions of never users [16]. Data from the National Survey on Drug Use and Health indicate a significant decrease in perceived "great risk" of marijuana use, and a significant increase in daily marijuana use from 2002-2012 [17]. Data from Monitoring the Future, a long-term, national survey of American adolescents, college students, and high school graduates, show that among 12th graders, the percentage of those who disapproved of those who try marijuana once or twice decreased almost 10 percentage points from 2005 to 2015 (55.0% vs 45.5%). The percentage of those who disapproved of those using marijuana regularly fell almost 12 percentage points in that same time frame (82.0% to 70.7%) [18]. Studies have found that states with medical marijuana laws had higher prevalence of marijuana use and lower perceived harm of marijuana use among adolescents compared to states without medical marijuana laws. However, states with

medical marijuana laws already had higher rates of marijuana use among adolescents prior to legalization and the afterwards the rates did not change [19,20].

Legalization of medical marijuana at the state level has left physicians with a dilemma. First, there is conflict between federal laws making it illegal to use, possess or grow and sell marijuana, and state laws allowing physicians to prescribe marijuana for certain conditions. Due to marijuana's categorization as Schedule I drug, there is limited evidence from randomized controlled trials on its therapeutic effects on the treatment of different medical conditions. About 86% of physicians believe that they should recommend medical marijuana to patients who are in need; however, the federal Drug Enforcement Administration (DEA) discourages prescribing it [21].

Second, physicians are not educated on dosage, indications and contradictions for medical marijuana while in medical school. For instance, Florida physicians are required to take an 8-hour course and pass an exam to be authorized to prescribe medical marijuana to their patients. However, physicians may feel unprepared to prescribe marijuana to their patients even after this course due to inadequate evidence on dosage. As a result, they may start with a small dose and increase dosage as needed [22]. Additionally, there is little information on the concentrations of active ingredients of marijuana; concentrations differ by manufacturing and cultivation process [22]. Across products, the ratio of THC to cannabidiol in marijuana seized by the DEA from 1995 to 2014 has increased from about 14:1 to about 80:1 [23]. THC is the primary psychoactive component of marijuana, while cannabidiol is the primary therapeutic component of marijuana. Physicians should know what ratio of THC to cannabidiol has been linked with a particular outcome as well as knowing what dose to prescribe.

Third, physicians have inadequate evidence to support decisions on whether to prescribe marijuana to their patients. This same lack applies to the education they can offer patients. The National Academies of Sciences, Engineering, and Medicine report stated that there was poor or insufficient evidence to make adequate recommendations on the harm or benefit of marijuana use for heart attack, stroke, diabetes, COPD, and asthma, among other conditions [11]. Literature even suggests that some physicians recommend patients go to the dispensary/pharmacy and "explain to them what they would like to treat", because of the lack of information physicians have to recommend treatment based on the condition [22].

To meet the needs of physicians, additional marijuana research must be conducted, including but not limited to nationally representative observational studies, and randomized clinical trials that could provide evidence for the risks and/or benefits of medical marijuana use. These studies should specify concentration of active ingredients and dosage tested to treat varying indications. Medical guidelines should be developed for physicians to recommend safe and effective amounts of the drug to their patients. Further, requiring medical marijuana manufacturers to label each ingredient concentration clearly should be included in state marijuana regulatory planning.

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