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A Scientific Investigation into the Therapeutic and Adverse Effects of Cannabis

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Abstract

Amid spreading legalization of cannabis nationwide, the use of the drug for medicinal or recreation purpose alike is becoming increasingly commonplace. From customized cultivation practices to pharmaceutical developments, cannabis has changed from an illicit substance to a drug used for purposes of both therapy and indulgence. More data are becoming available pertaining to drug pharmacodynamics and pharmacokinetics, which may help guide clinical practices, and better define intoxication, toxicity, and safety profiles. Scientific research of varying quality highlights treatment with cannabis for symptoms related to chronic pain conditions, multiple sclerosis, seizure disorders, and HIV- and cancer-related sequelae, among others. Research also of various quality points to potential acute and chronic health effects associated with cannabis use that infer many clinical and public health implications, often disproportionately affecting vulnerable populations. Possible adverse effects may impact, but are not limited to, psychiatric, cardiovascular, pulmonary, and neurological domains, as well as the ability to operate a motor vehicle. Many therapeutic and side effects appear dose-dependent, though adverse effects are more likely to occur with cannabis dependence or abuse. The purpose of this conceptual framework is to briefly explore the pharmacology, demographics, and systematically-weighted evidenced-based therapeutic and adverse effects of cannabis (using the Scottish Intercollegiate Guidelines); highlight clinical, individual, and public implications related to cannabis use, dependence, and abuse; and identify gaps in the literature that could influence research in the future.