

Proceedings of the 2023 Cannabis Clinical Outcomes Research Conference

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Keywords

Cannabis Clinical Outcomes Research Conference · Conference proceedings · Medical marijuana · Cannabis · Cannabinoids · Cannabidiol · Marijuana efficacy · Marijuana clinical outcomes · Mental health · Public health

Abstract

The Consortium for Medical Marijuana Clinical Outcomes Research, a multi-university collaboration established by the state of Florida in the USA, hosted its third annual Cannabis Clinical Outcomes Research Conference (CCORC) in May 2023. CCORC was held as a hybrid conference, with a scientific program consisting of in-person sessions, with some sessions livestreamed to virtual attendees. CCORC facilitated and promoted up-to-date research on the clinical effects of medical cannabis, fostering collaboration and active involvement among scientists, policymakers, industry professionals, clinicians, and other stakeholders. Three themes emerged from conference sessions and speaker presentations: (1) disentangling conflicting evidence for the effects of medical cannabis on public health, (2) seeking solutions to address barriers faced when conducting clinical cannabis research – especially with medical cannabis use in special populations such as those who are pregnant, and (3) unpacking the data behind

cannabis use and mental health outcomes. The fourth annual CCORC is planned for the summer of 2024 in Florida, USA.

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Published by S. Karger AG, Basel

Introduction

All but three state governments in the USA currently permit cannabis use for medical or non-medical purposes (or both) as of 2023 [1]. In 2016, the state legislature of Florida approved cannabis, referred to as medical marijuana in the state legislation, for persons with qualifying conditions. As of June 2023, there are over 820,000 registrants in the state's medical marijuana program [2]. To address the limited data on the safety and effectiveness of medical cannabis, the Florida State Legislature established the Consortium for Medical Marijuana Clinical Outcomes Research to conduct, disseminate, and support scientific research on clinical outcomes related to cannabis use. These Consortium goals are achieved through developing research infrastructure and support, evidence syntheses and dissemination, a grants program, a research data repository, and a community outreach program [3]. The Cannabis Clinical Outcomes Research Conference (CCORC)

aligns with the Consortium’s mission to increase research engagement, promote collaboration, and disseminate findings.

Conference Format

CCORC 2023 was held in a hybrid format (for more information, see www.ccorc.mmjoutcomes.org) on May 18 and 19 at Lake Nona-Orlando, FL, USA. The 3rd annual CCORC expanded upon the research agenda presented at the 2nd CCORC in 2022 [4] to fulfill three main objectives: (1) to disseminate research investigating medical cannabis use, efficacy, safety, and other relevant outcomes, (2) to provide a venue for clinical and research educational opportunities related to medical cannabis, and (3) to foster research collaboration and stakeholder engagement between Consortium member institutions and beyond.

Scientific Program

The 2023 CCORC program included three keynote presentations, eight oral presentations from top-scoring abstract submissions, panel discussions, and two poster sessions featuring thirty-nine research abstracts selected following peer review. Keynote presentations were recorded and available on the conference website for conference attendees, while digital versions of posters were publicly available. The conference also showcased top abstracts selected for their significance and contribution to the field. These abstracts covered a wide range of topics, including cannabis constituents in relieving phantom limb pain in rats, the enhancement of working memory in aged rats, the development of a novel natural language processing algorithm to extract cannabis use data from clinical notes, and the prediction of potential cannabinoid-drug interactions. Additionally, the conference featured abstracts that explored various aspects of cannabis research, including methods to quantify cannabis consumption and recruitment methods.

The presentation recordings are available online to registrants until December 2023. Accepted abstracts are included in this issue of *Medical Cannabis and Cannabinoids*. CCORC 2023 had over 130 registrants and virtual attendees. Attendees included researchers, students, clinicians, government officials, and industry representatives from Florida and around the globe. Attendees were able to earn continuing medical education or continuing pharmacy education credits for components of the scientific program.

Three main themes on clinical cannabis research conduct and interpretation emerged throughout the conference: (1) disentangling conflicting evidence in research studying the relationship between medical cannabis and public health, (2) seeking solutions to address barriers faced when conducting clinical cannabis research – especially with use in special populations such as those who are pregnant, and (3) unpacking the data behind cannabis use and mental health and cognition.

Disentangling Conflicting Evidence: Medical Cannabis and Public Health

With an increasing number of states legalizing its use, interest in exploring medical cannabis’s therapeutic potential and understanding its impact on various medical conditions has grown. Clinical research studies are investigating the efficacy and safety of medical cannabis, while regulatory frameworks are being developed to ensure safety and product quality. Despite the growing consumer demand, ongoing uncertainty exists surrounding the appropriate use, potential risk-benefit, and treatment effects of medical cannabis for various indications, requiring continued research to inform clinical practice and policy-making.

A keynote speaker who presented research within this theme, Dr. Shanna Babalonis, director of the University of Kentucky Cannabis Center, explained the known interactions between opioids and cannabinoids, addressing their abuse potential and clinical implications through her research findings. She shared that mixed results have been found from pre-clinical and observational studies on the potential opioid-sparing effects of cannabinoids for analgesia. However, randomized clinical trials did not support the benefit. Evidence about potential harms or development of problematic use when using cannabinoids and opioids concurrently is more consistent. Though there is evidence that cannabinoids may provide modest relief from opioid withdrawal, it does not appear to reduce the harm associated with opioids [5, 6].

Several other selections of the program addressed the public health impacts of medical cannabis. One symposium provided an overview of the “Medical Marijuana & Me (M³) Study” and presented findings from a large-scale cross-sectional survey of Florida medical cannabis patients. This session shed light on the experiences and perspectives of medical cannabis users, further contributing to our understanding of its clinical effects to support generating hypotheses on the effects of medical cannabis for individuals and outcomes for public health. Panelists

in the symposium discussed the M³ study design and presented results describing patient characteristics, products used, and frequent use indications – primarily pain, sleep, and anxiety.

Breaking Barriers: Medical Cannabis Use in Special Populations Such as Pregnancy and Clinical Challenges

The conference also addressed unique considerations and challenges associated with cannabis use in specific populations and clinical settings, such as use during pregnancy. Dr. Kelly Young-Wolff from the Center for Addiction and Mental Health Research at Kaiser Permanente Northern California delivered a keynote presentation, highlighting her current research regarding increasing cannabis use trends during pregnancy [7, 8]. The effects on offspring when exposed to cannabis in utero, and the policy and clinical implications thereof. She recommended that punitive policies criminalizing prenatal substance use should be replaced with those that prioritize safeguarding the health of mothers and their children while promoting equitable access to supportive and non-punitive substance use treatment as better health outcomes are achieved for both parents and offspring when evidence-based care is provided for problematic substance use during pregnancy [9, 10].

Three symposia also addressed clinical challenges and cannabis use in special populations. Experts in the panel for the symposium “Clinical challenges in medical marijuana practice” shared their experiences and perspectives, shedding light on the complexities and considerations involved in providing medical cannabis treatment. Another symposium focused on using contemporary communication approaches to educate athletes about cannabis. The session explored innovative strategies to communicate the risks and benefits of cannabis use to athletes, aiming to promote informed decision-making and responsible cannabis use. Additionally, a symposium was held to disseminate the latest research regarding the role of exosomes containing cannabidiol in cancer patients as well as chemotherapy-induced peripheral neuropathy. This session delved into the potential therapeutic applications of cannabidiol-loaded exosomes in managing neuropathic pain associated with cancer treatment.

The conference also featured top abstracts that presented research among special populations. These abstracts included studies such as cannabidiol treatment and an anti-inflammatory gene expression signature in

people living with HIV, cannabinoids in combination with terpenes to overcome cancer resistance, and health and behavioral consequences of perinatal cannabidiol exposure in mice raised to adulthood. Other abstracts explored topics such as the impact on health among older adults, the effects of chronic cannabis use and its routes of administration on the brain, inflammation, immune function, and pain in people with HIV infection, and the risk of gastrointestinal cancers among cannabis users compared to nicotine users.

CCORC provided a forum to discuss the unique challenges and opportunities associated with cannabis use in special populations and clinical settings. By sharing research findings and promoting scientific exchange, the conference aimed to contribute to the understanding of cannabis use and its clinical implications in these specific contexts.

Mind Matters: Unpacking the Data Behind Cannabis Use and Mental Health and Cognition

A third emergent theme focused on the complex relationship between cannabis use and mental health and cognition. As an illustration of this theme, the keynote presentation by Dr. Jodi Gilman from Harvard Medical School presented her findings regarding the effects of non-medical and medical cannabis on cognition and the clinical implications thereof. She emphasized that cannabis use was associated with the development of symptoms related to cannabis use disorders, but therapeutic effects for the treatment of insomnia need further investigation [11]. Although current evidence demonstrates that cannabis use improves sleep quality in the short term, no significant improvement in pain, anxiety, or depression was reported in several studies on adolescents and young adults in which she led [12].

One of the top abstracts presented was about pain severity changes among cannabis consumers before and after ketamine-assisted psychotherapy, comparing the effects of psycholytic and psychedelic approaches. Other abstracts within this theme explored topics such as the relation between cannabinoid exposure levels and symptoms of anxiety and sleep disturbances, the risks for and under-diagnosis of cannabis hyperemesis syndrome, the prevalence of anxiety and depression symptoms in older women substituting prescription medications with cannabis or cannabidiol, and the examination of substance use, health, and mental health outcomes in states with and without medical cannabis laws.

These abstracts provided valuable insights into the effects of cannabis on mental health and cognition outcomes, including anxiety, depression, pain, and the potential therapeutic benefits of ketamine-assisted psychotherapy. The research presented at CCORC aimed to deepen our understanding of the complex relationship between cannabis use, mental health, and cognition, contributing to evidence-based practices and interventions in this area. By focusing on the intersection of cannabis use and mental health outcomes, this theme highlighted the importance of comprehensive research. It informed decision-making to promote positive mental health outcomes in individuals using cannabis for various reasons.

Conclusion

CCORC 2023 encouraged collaboration and thoughtful discussion among researchers, clinicians, and industry representatives. Several resources to promote and facilitate cannabis clinical outcomes research were identified and shared with attendees during the event. The conference identified research and clinical challenges and potential solutions for closing the gap in the literature and practice. Experts emphasized the importance of filling evidence gaps on cannabis effectiveness and safety in mental health and special populations such as pregnant women and patients with HIV or cancer. The conference also provided a vehicle for disseminating the latest research on cannabis and cannabinoid therapeutic potential and safety concerns in treating several medical and psychiatric conditions. The fourth annual CCORC is planned for summer 2024 in Florida, USA.

Acknowledgments

The Consortium leadership would like to acknowledge members of the Consortium Board from its nine-member institutions (Florida Agricultural and Mechanical University, Florida Atlantic University, Florida Gulf Coast University, Florida International University, Florida Memorial University, Florida State University, University of Central Florida, University of Florida, and the University of Miami); members of the Scientific Program Committee (Dr. John Crump,

ReLeaf Now; Dr. Debra Fadool, Florida State University; Dr. Amie Goodin, University of Florida; Dr. Jeevan Jyot, University of Florida; Dr. Jeff Konin, Florida International University; Dr. Sari Paikoff, Florida Gulf Coast University, Dr. Mandip Sachdeva, Florida Agricultural and Mechanical University; Dr. Dinender Singla, University of Central Florida; Dr. Rose Stiffin, Florida Memorial University; Dr. Denise Vidot, University of Miami; Dr. Karina Villalba, University of Central Florida; and Dr. Almut Winterstein, University of Florida); planning committee members (Amie Goodin, Jeevan Jyot, Sam McKee); Consortium volunteers and contributors (Sebastian Jugl, Ruba Sajdeya, Gabe Spandau, Hannah Fectel, Alicia Koshevoy, Phoenix Tran, Sam McKee); volunteer abstract reviewers; UF Creative Works and Research and Academic Center at Lake Nona IT Team for media support, La'Zendra Danforth and Michelle Boyd for event planning; Florida state legislature for Consortium funding; and many other organizations and institutions that contributed to this year's CCORC conference.

Conflict of Interest Statement

All authors receive funding support from the Consortium, which is funded by the state of Florida. A.J.G., P.T.T., S.M., R.S., J.J., R.L.C., Y.W., and A.G.W. have no other conflicts to declare.

Funding Sources

This work was funded by the Florida State Legislature through the Consortium for Medical Marijuana Clinical Outcomes Research. The funders had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

Author Contributions

Concept and design, administrative, technical, or material support, and supervision: Amie J. Goodin and Almut G. Winterstein. Acquisition, analysis, or interpretation of data and critical revision of the manuscript for important intellectual content: Amie J. Goodin, Phuong T. Tran, Sam McKee, Ruba Sajdeya, Jeevan Jyot, Robert L. Cook, Yan Wang, and Almut G. Winterstein. Drafting of the manuscript: Sam McKee, Phuong T. Tran, and Amie J. Goodin. Obtained funding: Robert L. Cook and Almut G. Winterstein.

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