

MARIJUANA RESEARCH REPORT

2019-2021

ADAI University of Washington

ADAI, a multidisciplinary research center in the University of Washington Department of Psychiatry and Behavioral Sciences, has been the recipient of the **Washington State Dedicated Marijuana Fund for research at the University of Washington** (Dedicated Marijuana Fund) since July 2015.

INTRODUCTION

Cannabis Research & Education in Pandemic Times

Studies have found that substance use increases during times of economic stress, disproportionately affecting racial and ethnic minorities and individuals experiencing mental health challenges^{1,2,3,4}. In this unprecedented time of both a deep economic crisis and a pandemic, such an increase further amplifies the COVID-related inequities experienced by marginalized groups, as they face disproportionately higher infection rates and mortality from the virus.



In our state, cannabis sales have been soaring, with a 41% increase in excise tax collection between August 2019 and August 2020⁵. This increase alone is a concern, but combined with the fact that a higher proportion of the products in the WA market are high THC potency manufactured cannabis products (currently 35% of sales, up from 9% in 2014)⁶, it becomes even more worrisome. Also of concern is evidence from Canada⁷ and the Netherlands⁸ that suggests this increase in cannabis sales during COVID does not represent more consumers, but rather higher levels of consumption among current cannabis consumers.

This new reality has all the ingredients of a perfect public health storm: an increasingly potent substance being used in higher doses and more frequently by a segment of the population where people with behavioral health challenges and those experiencing social inequalities are overrepresented.

As the University of Washington recipient of the Washington State Dedicated Marijuana Fund for research, ADAI has taken seriously the mandate to study the “*short and long-term effects of marijuana use and related consequences*” as framed by I-502 and other legislative language. More than ever, the work that we do at the UW is essential for honoring our state’s commitment to equity and social justice.

This report presents ADAI activities and projects with support from the Dedicated Marijuana Fund during the 2019-2021 biennium. It also documents ADAI’s ability to successfully adjust to the challenges of conducting research in a time that imposes so many limitations.

Susan Ferguson, ADAI Director

Bia Carlini, ADAI Cannabis Research and Education

RESEARCH PROJECTS & PUBLICATIONS

ADAI Research Projects

Every biennium, ADAI Cannabis Workgroup scientists carry out short-term research projects that can assist Washington community-based agencies and policymakers in making decisions and setting priorities.

We share our research findings with stakeholders as they become available and regularly participate in state-based workgroups, presenting at state, county, and community-based agencies webinars/meetings. We also disseminate results from these projects through academic peer-reviewed publications, online factsheets and research briefs, and other educational materials via our dedicated website and other channels (see section on Dissemination & Outreach).

Projects

The following projects were concluded in the 2019-21 biennium:

"We Don't Speak English at Home": Immigration, Acculturation, and Cannabis Use Among WA State Youth

Bia Carlini, PhD, MPH, Jason Williams, PhD, Robin Harwick, PhD, MS

Cannabis Industry Marketing Violations in WA: An Analysis of Public Records

Bia Carlini, PhD, MPH, Sharon Garrett, MPH, MA, Caislin Firth, PhD, MPH, Ilana Pinsky, PhD

"I Don't Do Drugs, Just Weed"- Cannabis-only vs. Cannabis and Other Drugs Use – An Analysis of a National Survey Data

Bia Carlini, PhD, MPH, Gillian Schauer, PhD, MPH

Food Hardship as a Strong Predictor of Tobacco and Cannabis Use Among Youth in WA State

Robin Harwick, PhD, MS, Bia Carlini, PhD, MPH, Jason Williams, PhD

[Find detailed descriptions of these ADAI projects here.](#)

ADAI Cannabis Workgroup

The ADAI Cannabis Workgroup is comprised of investigators and program staff who have come together to collaborate on research and dissemination activities in response to emerging needs of the community in the context of legalized cannabis.

Established in 2012, the year I-502 legislation charged ADAI with providing a public portal to scientifically accurate public education materials, this group: 1) carries out and publishes results of intramural research; 2) conducts scientific literature reviews on trending topics; 3) develops research-based fact sheets, policy briefs, and trainings; and 4) fosters collaborative research opportunities with researchers at the University of Washington, Washington State University, state agencies, and other groups.

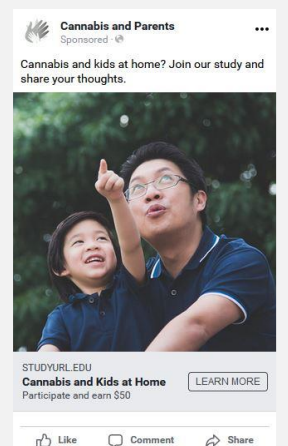
Workgroup members:

Meg Brunner, MLIS
Beatriz Carlini, PhD, MPH
Caislin Firth, PhD, MPH
Sharon Garrett, MPH, MA
Erinn McGraw, BFA
Ilana Pinsky, PhD
Gillian Schauer, PhD, MPH
Jason Williams, PhD

Consumer Assessment of Receptivity to Point-of-Sale Education and Safe Storage Intervention

Funded by Public Health Seattle King County and the Spokane Regional Health District, this project collected information to inform a pilot prevention intervention promoting free safe storage devices and youth prevention messaging in cannabis stores for parents and guardians who use cannabis. CERP conducted interviews and focus groups with adults who use cannabis and have children under 18 years old in their home. Participants were asked about their current storage practices and beliefs, interest in receiving a free storage device, intentions to use such a device, and device features that would be most helpful or desirable. In addition, they were asked to react to messages that promoted secure storage of cannabis with the intent to keep it away from youth and to reduce youth cannabis exposure.

[Learn more about this work on safe storage here.](#)



Publications

The process of getting a publication released in a peer-reviewed scientific journal can take as long as a year or more. ADAI has traditionally shared findings with the Washington community while papers are under submission to expedite the dissemination of work that can be used to support decision-making. The list below reflects the work of the ADAI Cannabis Workgroup alone or with collaboration/funding from other agencies and organizations. In most cases, the actual research work happened in previous biennia.

Carlini, B. H., Garrett, S. B., Firth, C. & Harwick, R. M. Cannabis retail staff (“budtenders”) attitudes towards cannabis effects on health experiences interacting with consumers – Washington State, USA. *Journal of Psychoactive Drugs* 2021 (in press).

Carlini BH, Harwick R, Garrett S. Anytime is the right time: A content analysis of marijuana ads in freely distributed print media in Western Washington State, USA. *Subst Use Misuse* 2020;55(5):806-817. [View abstract](#).

Harwick RM, Carlini BH, Garrett SB. A taxonomy of consumers' perspectives on the function of cannabis in their lives: a qualitative study in WA State, USA. *J Psychoactive Drugs* 2020;52(5):393-400. [View abstract](#).

Carpenter KM, Torres AJ, Salmon EE, Carlini BH, Vickerman KA, Schauer GL, Bush T. Marijuana use and adherence to smoking cessation treatment among callers to tobacco quitlines. *Prev Chronic Dis* 2020;17:E102. [Free online](#).

Haggerty KP, Carlini BH. Understanding the intergenerational transmission of substance use and problem behavior: Implications for future research and preventive interventions. *Psychol Addict Behav* 2020;34(8):894-897. [View abstract](#).

Firth CL, Carlini BH, Dilley JA, Wakefield J, Hajat A. What about equity? Neighborhood deprivation and cannabis retailers in Portland, Oregon. *Cannabis* 2020;3(2). [Free online](#).

Featuring New ADAI Research Scientists

In this biennium, ADAI was able to add two part-time cannabis scientists to collaborate on selected intramural projects, Dr. Gillian Schauer and Dr. Caislin Firth.

[A list of their publications in collaboration with other organizations during this biennium can be found here.](#)



Research Projects Across UW

ADAI periodically releases Requests for Proposals (RFPs) to University of Washington scientists and funds marijuana research across multiple disciplines on the “*short and long-term effects of marijuana use and related consequences.*” ADAI’s RFPs are framed by I-502 and other legislative language and include the impact of marijuana use and legalization on public health in Washington State, community norms, and individual and group behaviors. Completion of the following projects is scheduled for June 2021.

Projects funded this biennium are:

Do Current Parenting Interventions Work for Parents Who Use Marijuana? Effective Strategies for Preventing Underage Marijuana Use among their Adolescent Children

Marina Epstein, PhD, Social Development Research Group, School of Social Work

Cellular Mechanisms Underlying Cannabinoid Enhancement of Opioid Pain Relief

Benjamin Land, PhD, Research Assistant Professor, Pharmacology

Dissecting Cannabinoid-Neurotensin Neuromodulation in Paraventricular Thalamic Reward and Aversion Circuits

Michael R. Bruchas, PhD, Professor, Anesthesiology & Pain Medicine, Center for Neurobiology of Addiction, Pain, and Emotion

Feasibility of Prazosin for Cannabis Use Disorder in Individuals With or Without Post-traumatic Stress Disorder

Garth Terry, MD, PhD, Acting Assistant Professor; Physician/Research Associate
Psychiatry & Behavioral Sciences, VA Mental Illness Research, Education, and Clinical Center (MIRECC)

[Find detailed descriptions of these UW projects here.](#)

PARTNERSHIPS WITH UNIVERSITIES & RESEARCH GROUPS

UW and WSU scientists working together to inform policy and practice



High-potency manufactured cannabis concentrates, such as oils and butters, contain THC levels varying from 60-90%. These levels are a 6-to-9-fold increase over what was considered “high-potency” back when the main method of use was smoking the cannabis plant.

What are the likely health risks of highly concentrated products? Is high potency cannabis more detrimental to health than low potency cannabis? Which populations are most likely to be affected by high potency cannabis use?

To address these questions, the Prevention Research Subcommittee, an advisory group to the Washington Division of Behavioral Health and Recovery, invited a group of researchers to collect the scientific evidence on the health and behavioral risks associated with high-potency cannabis use in March of 2020. Under the leadership of ADAI’s Dr. Carlini, experts from University of Washington and Washington State University came together to summarize the evidence to date and develop a consensus statement with the aim to inform policy and practice.

According to the workgroup’s statement, research available to date shows that as THC content of cannabis products increases, so too does the risk of adverse health effects. This increased risk from the use of higher potency cannabis products is particularly concerning for young users and those with certain pre-existing mental health conditions. These harms are also likely to disproportionately affect marginalized populations (low income, minorities, e.g.) who choose high-potency products because of their lower costs, ease and discrete nature of use, glamorization of its use through social media and advertising, and perception of safety.



Members of the workgroup and results of this collaboration (the full report, a research brief, consensus statement, and public presentation slides) can be found on the ADAI website along with additional resources and summaries related to cannabis potency at: <https://adai.uw.edu/research/cannabis-research-education/high-potency-cannabis>.

SCIENCE-BASED EDUCATION & DISSEMINATION

New look! ADAI's Learn About Marijuana website

LearnAboutMarijuanaWA.org

ADAI's Learn About Marijuana website has been newly redone with updated information and a fresh look! This site is widely viewed as an authoritative source for information about marijuana, with more than 700 organizations in Washington and other states linking to it and approximately 300,000 pages viewed between July 1, 2019 and December 31, 2020.

Launched in 2012, the Learn About Marijuana website is supported by I-502 Marijuana Funds distributed to ADAI. The website features research briefs and factsheets on dozens of marijuana topics, including information on products and modes of administration, health effects, other drugs and cannabis, and legal and safety issues. Special resource pages are also available for parents, teens, adult consumers, Spanish-speakers, and people seeking help for problem use. The site also features e-learning modules, frequently asked questions, and options for accessing treatment or support.



Updated! Online Medicinal Cannabis and Chronic Pain provider training

adai.uw.edu/mcacp

In 2017, the National Academy of Sciences concluded that there was "conclusive and substantial evidence that cannabis and cannabinoids have a moderate effect as a therapeutic agent in the treatment of chronic pain among adults."⁹ While a moderate effect doesn't seem like much, when it comes to chronic pain this is great news, especially considering 2016 CDC findings that opioid medications show no evidence of efficacy for many of the same conditions.¹⁰

Keeping in mind the continuing need to educate Washington clinicians on this topic, ADAI launched an updated 2020 version of our 2014 online training for healthcare professionals on medicinal cannabis and chronic pain. This 2-module online training presents current science, clinical practice guidelines, and Washington State DOH Medical Marijuana

Authorization Guidelines. Updates were made with support of I-502 funds and include new information about Vape-associated Lung Injury (EVALI), CBD products available in drugstores and online, the latest scientific evidence, and new features allowing for easier navigation and improved accessibility.

The training is free. For those interested in Continuing Medical Education credits (up to 2 AMA PRA Category 1 Credits™), they are available at low cost for clinicians through the University of Washington School of Medicine until August 2022.



DISSEMINATION & OUTREACH

ADAI understands that new knowledge can only impact practice if it is disseminated widely and in a timely manner. The events below are a selected list of ADAI Cannabis Research and Education staff participation in county, state, multi-state, and national events.

In Washington State

WA State House Commerce and Gaming Commission

Presenter (Dr. Ferguson, Dr. Carlini): *Cannabis-Related Research at the University of Washington*, September 15, 2020.



Washington State Liquor and Cannabis Board

Invited Speaker (Dr. Carlini): Virtual WSLCB Prevention Roundtable. *Economic Crisis and Use of Legal Substances*, June 8, 2020.

Member (Dr. Carlini): Taxing Cannabis by Potency Workgroup, WSLCB Legislative Direct Work and Report, September-December 2020.

Invited Speaker (Dr. Carlini and Dr. McDonnel, WSU): *Research Spotlight: Cannabis Concentration and Health Risks*, December 3, 2020.

Washington Healthy Youth Coalition (WHY)

Invited Speaker (Dr. Carlini): *Cannabis Concentration and Health Risks*, December 4, 2020.

County Agencies

Presenter (Dr. Carlini): Kitsap Public Health District. *Budtenders as Cannabis Health Risk Educators*, June, 2020.

Member (Ms. Garrett): King County Youth Marijuana Prevention and Education Program (KC-YMPEP) Advisory Committee, July 2019-June, 2020.

Community-based Organization Presentations

Facilitator (Ms. Garrett): Prevention WINS Town Hall, *Is Teen Drug Use Inevitable? Breakout Session*, September 14, 2020.

Invited Speaker (Dr. Carlini): Northeast Seattle Together (NEST). *CBD, THC, Hemp, and Marijuana: What All the Buzz is About*, December 16, 2019.

Outside Washington State

Multi-State Agencies

Presenter (Dr. Carlini and Dr. McDonnel, WSU): NW Prevention Technology Transfer Center and NW Mental Health Technology Transfer Center. *The More the Merrier?* December 17, 2020.

National

Invited Speaker (Dr. Carlini): 2019 Medical Cannabis Symposium: The Intersection of Clinical Practice and Science. Rutgers Robert Wood Johnson Medical School and the New Jersey Department of Health. Somerset Park, Somerset, NJ. The Public Health Impact of Cannabis Legalization. *What Do We Know So Far?* December 18, 2019.

International

ADAI hosted the Embassy of the Kingdom of The Netherlands representatives lead by Mr. Peter Slort, Counselor for Justice and Security of the embassy. The goal of their visit was to learn about Cannabis Legalization in the State of Washington. July 23, 2019.

Round table participant (Dr. Carlini): OnixCann, Sao Paulo, Brazil. Medicinal Cannabis Summit. *Cannabis Regulation and Public Health: Comparing Brazil and USA Legislation*, August 12, 2020.

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6. WA State House Commerce and Gaming Commission work session. Sep 15, 2020. [View online.](#)
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