4-2023

Elevation of cannabis knowledge: higher learning

Savannah Marie Patterson
Providence

Anisha Boetel
Providence

Elevation of cannabis knowledge: higher learning

Savannah Marie Patterson, PGY3, MNeuroSci; Anisha Boetel, MD
Psychiatry Residency of Spokane

Abstract

Cannabis is the most commonly used federally illegal substance in the United States. There is a paucity of data on the outcomes of cannabis use in the context of mental health disorders, and the body of available evidence has contradictory results. Physicians and social workers are often asked to treat mental health diagnoses for patients who are currently using cannabis, though have limited education on how to assess patient use and discuss the resulting impacts on mental health. 32 residents, medical students, and care managers were polled to assess understanding of the available routes of cannabis use, confidence in discussing cannabis use with patients, and identifying accurate, data-based statements about cannabis use. Overwhelmingly, those polled endorsed a significant knowledge gap on these topics, and low confidence in their ability to discuss these topics with patients. Utilizing peer reviewed data, we developed a 2-part didactic series and visual representation of a standard THC dose to help compare quantity of THC in commonly used cannabis products. Learners polled after viewing these materials reported greater levels of confidence in their knowledge of different routes of cannabis use, their ability to discuss cannabis use with patients, and were able to identify evidence-based statements about cannabis at an improved rate.

Principles of adult learning

The goals of this project fostered adult learning principles in the following ways:

- Experience: Throughout the presentation learners are asked to reference their own history of discussion of cannabis with patients
- Ownership: Learners are encouraged throughout the presentation to discuss cannabis use as a group, and how the data relates to their practice
- Relevance: learners are currently asked to discuss cannabis and mental health with patients, and when polled do not endorse an adequate knowledge base
- Self-directed learning: The didactic materials have been distributed to learners to encourage further research outside of the presentation

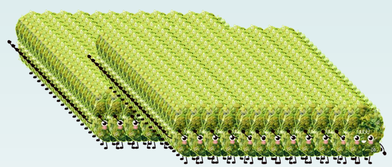
Introduction

This project was conducted following the development of a SMART goal to facilitate specific and measurable results that are relevant to multidisciplinary teams within residency programs.

Specific	The goal was to improve learner understanding of cannabis use and its effects on select mental health diagnoses. We developed a novel learning tool to accompany a 2-part didactic series. The didactic series addresses the mixed messages seen in current literature on the impact of cannabis use.
Measurable	Survey responses will be evaluated for improvement in confidence, and ability to select peer reviewed data when presented with a mix of factual and inaccurate information.
Attainable	Given the opportunity to conduct the presentation this is an attainable goal. We worked with program coordinators to find time available for the presentation.
Relevant	Physicians and social workers are often asked to treat mental health diagnoses for patients who are currently using cannabis, though have limited education on how to assess patient use and discuss the resulting impacts on mental health.
Time-based	By 3/1/23 the presentation will be viewed by all psychiatry residents and social workers associated with the psychiatry residency of Spokane.

Figure 1: Nuggy is the novel learning tool, a visual representation 2 mg THC.

Accompanying the presentation is a visual representation of a standard unit of THC. 2 mg of THC is sufficient for an occasional cannabis user high. The goal of having a milligram dosage and a visual representation to reference is to support patient and provider conceptualization of cannabis use. For example, 1 gram of cannabis flower contains 12 Nuggies, or enough THC for 12 occasional users to experience THC's psychoactive properties. Compare this to 1 gram of concentrate used with a vape pen, which would be 470 Nuggies. The visual comparison of Nuggies in different forms of cannabis helps to reinforce the level of impact those forms of cannabis can have on patients.



1 gram of cannabis concentrate

1 gram of cannabis flower

Figure 2: visual representation of the THC present in 1 gram of cannabis concentrate used for vaping vs 1 gram of cannabis flower.

Methodology

The didactic presentation took place in either a single sitting (1.5 hours) or two 45 mg lectures. The presentation was preceded by a pre-test, included a power point presentation, and followed by a post-test. During the presentation there were several points at which the learners were encouraged to discuss the information presented in the context of how it will impact their practice.

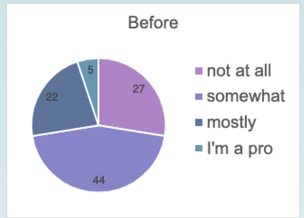
The pre and post-test consisted of the same questions. The questions were:

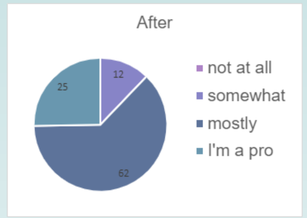
1. I feel confident I know the difference between flower, vape, edibles concentrates and dabs.
2. I feel confident when I ask my patients how much cannabis they use, that I have a general understanding of what they are talking about
3. Select the true statements: people who use any cannabis are at an increased risk for MDD; people with MDD are at a greater risk for using cannabis; The effects of endogenous ECS ligands are well categorized; all of the above; None of the above
4. True or False: Medical cannabis availability correlates with reduction in the opioid overdose mortality rate
5. Select the endogenous ECS ligands: arachadonic acid; delta 8 THC; CBD; anandamide; PDE2; CBD; delta 8 THC

Questions 1 and 2 were answered by selecting one option of the following choices: not at all, somewhat, mostly and I'm a pro. Survey respondents were not required to answer all questions. For discussion of results, selection of "I'm a pro" indicates a high level of confidence. Questions 3, 4, and 5 required respondents to select the correct answers, results reported in percentages of respondents who were able to select the correct answers.

Results

In comparison with survey responses prior to the presentation, Individuals polled after viewing the educational materials reported a higher level of confidence in knowledge of understanding of different routes of cannabis (question 1).

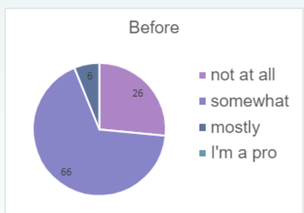


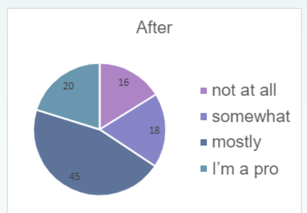


	Before	After
Not at all	27%	0
Somewhat	44%	12%
Mostly	22%	62%
I'm a pro	5%	25%

Figure 3: Table and pie chart depicting survey responses to question 1: "I feel confident I know the difference between flower, vape, edibles concentrates and dabs". Measures are by percentage of pre and post-test responses.

Prior to viewing the presentation, no respondents felt a high level of confidence they could discuss different routes of cannabis use with patients, After viewing respondents with a high level of confidence increased to 20% (question 2).

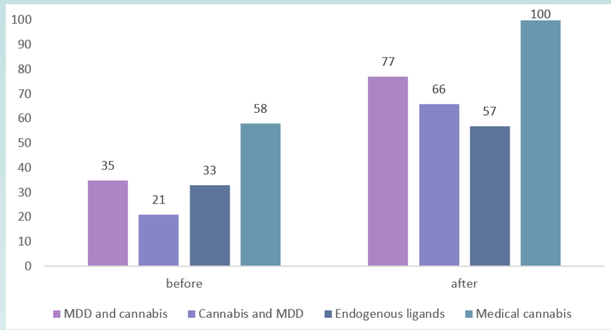




	Before	After
Not at all	26%	16
Somewhat	66%	18%
Mostly	6%	45%
I'm a pro	0%	20%

Figure 4: Table and pie chart depicting survey responses to question 2: I feel confident when I ask my patients how much cannabis they use, that I have a general understanding of what they are talking about". Measures are by percentage of pre and post-test responses.

A higher percentage of survey respondents were able to correctly identify evidence-based statements after viewing the presentation. See questions 3, 4 and 5 in the methodology section for full verbiage.



	Before	After
people who use any cannabis are at an increased risk for MDD;	35%	77
people with MDD are at a greater risk for using cannabis	21%	66%
Correct endogenous ECS ligands	33%	57%
Medical cannabis availability correlates with reduction in the opioid overdose mortality rate	58%	100%

Figure 5: Table and graph depicting percentages of survey respondents who correctly identified evidence-based statements about cannabis and effects on mental health. See questions 3, 4 and 5 in the methodology section for full verbiage

Conclusion

A presentation explaining routes of cannabis use, relative concentrations of THC via these routes, and data on cannabis impacts on mental health diagnoses has helped increase survey respondent confidence in both ability to talk about cannabis with patients and increased survey respondent knowledge of data-based cannabis information.

Limitations of this project include the lack of assessment of patient outcomes related to learners having viewed this material. It is unclear at this time if the positive outcomes measured correspond to any statistically significant improvements for patients.

Future directions will include cannabis impacts on diagnoses outside of mental health, patient information sources that incorporate data, and a didactic series available to multidisciplinary teams in both inpatient and outpatient settings. The patient information resource will be an adaptable learning platform meant to reflect the evolving nature of cannabis research outcomes. We propose a website with pages organized by DMS V based diagnoses that include the most up to date data concerning effects of cannabis on specific diagnoses. This will allow for health care providers, social workers and patients to collaborate and appreciate the complexity of the impact that cannabis has on a person's health.

To measure helpfulness of the adaptable learning resource there will be a tracker to see how often the resource is accessed, and an optional brief survey about usefulness and relevance, as a way of gauging impact.

Acknowledgements

Thank you to my patient, loving husband for sharing his knowledge gained from his work on a 502 farm.
Thank you to Dr. Boetel for excellent guidance and mentorship.
Thank you to Dominique Billingslea, MD and Amanda Aman, MD for sharing this learning tool with the Internal Medicine Residency of Vermont and Family Medicine Residency of Boise.
Thank you to Slavko Kahovsky with SVTdesign for use of the image of Nuggy