BUILDING INTENTIONS WITH THE THEORY OF PLANNED BEHAVIOR: A QUALITATIVE ASSESSMENT OF THE SALIENT BELIEFS ABOUT CANNABIS FOR THERAPEUTIC PURPOSE AMONG INDIVIDUALS WITH EPILEPSY

Shannon Antoine-Hardy, DrPH, MPH, CHES[1], Joseph Telfair, DrPH, MPH[2], Kelly Sullivan, Ph.D, MPH[2] & William Mase, DrPH, MPH[2]

Florida A & M University[1] & Georgia Southern University[2]

BACKGROUND

In the past decade, there has been an increasing interest in medical cannabis (MC) for the treatment of a wide range of debilitating illnesses. Evidence from clinical trials has reported numerous therapeutic uses of MC, including antispastic, antiemetic, analgesic, neuroprotective, and anti-inflammatory effects (1). Despite the availability of more than 25 different antiepileptic drugs (AEDs) and the provision of other medical therapies, 30% of people with epilepsy continue to have seizures (2). Studies have shown that 30% of patients who are taking AEDs continue to suffer from seizures, and this continuation of seizures indicates that certain seizure disorders cannot be relieved through anticonvulsant therapy (3).

Although medical marijuana is unsanctioned by mainstream medicine in the treatment of seizure control, many epilepsy patients have used cannabinoids as CAM treatment options (4). However, there are few studies regarding cannabinoids-based CAM, because marijuana is still a federal illegal stigmatized substance. Cannabinoids have been considered a method of suppressing seizures due to the abundance of CB1 receptors located in regions of the brain where partial seizures originate (5). Cannabidiol(CBD), cannabigerol (CBG), and cannabichromene (CBC) do not have psychoactive properties and bind to receptors found in the brain (CB-1) and body (CB-2), which provides relief of symptoms, such as inflammation, pain, and nausea (6). clinical trials are few due to the federal classification of marijuana as a Schedule I drug. Only a handful of clinical trials have explored the effects of cannabinoids on the symptoms of neurological disorders other than multiple sclerosis (5).

Because 3.4 million people are living with epilepsy (7), conventional treatments for such neurological disorders leave much to be desired, and no source of potential remedies should be overlooked. The evidence for the legitimate medical use of cannabinoids is limited to a few indications, including HIV/AIDS cachexia, nausea/vomiting related to chemotherapy, neuropathic pain, and spasticity in multiple sclerosis (1). Although cannabinoids show therapeutic promise as a viable treatment option for some medical conditions, vigorous clinical evidence is still lacking. AEDs can prevent seizures in approximately 70% of adult patients with epilepsy; however, nonadherence to AEDs is highly unlikely, with estimates ranging from 20 to 80% (8). Because more individuals with epilepsy are seeking CAM, it is essential to understand the social and contextual factors that influence their decision-making. Equally important, beliefs about AED medication and their association with adherence to AEDs may also influence their behavioral intentions towards the acquisition or dissent of medical cannabis.

PURPOSE OF STUDY

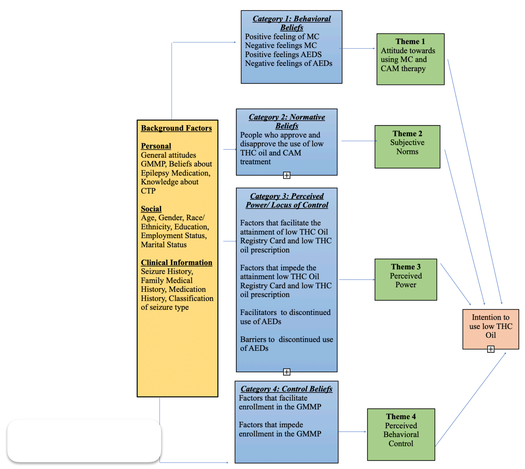
The purpose of this study is to investigate possible predictors that affect individuals' intention to adopt cannabis for therapeutic purposes (CTP), explore perceived barriers, as well as assess individuals' beliefs about their personal need for anti-epileptic drugs.

METHODOLOGY & MATERIALS

Study Design: Concurrent Nested-Triangulation

- Used methodologies recommended for Theory of Planned Behavior (TPB).
- Both qualitative and quantitative data were collected concurrently in one phase, and the data was analyzed separately.
- One phase of data collection included one in which priority was given to semi-structured interviews, while the BMQ- E survey was nested into the research and provided a supporting role.
- Structured interviews gathered data on potential predictors affecting participants' intention to adopt CTP.
- Beliefs about Medicine- Epilepsy Specific (BMQ-E) questionnaire gathered information on participants' personal need for AEDs and their concerns regarding the potential adverse harm of AED medication.
- Purposive sampling was used to recruit participants.
- Sample Population: Men and women with various seizure types.

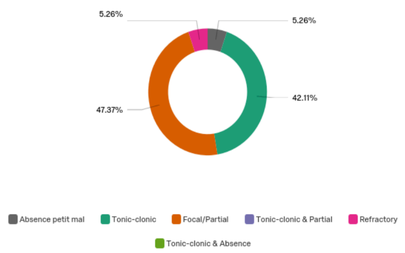
THEORETICAL FRAMEWORK OF HYPOTHETICAL PATHWAY



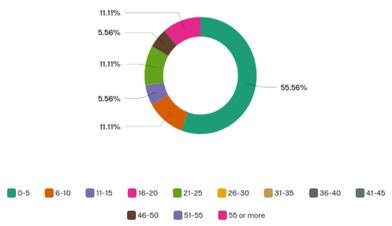
RESULTS

Findings of Descriptive Data

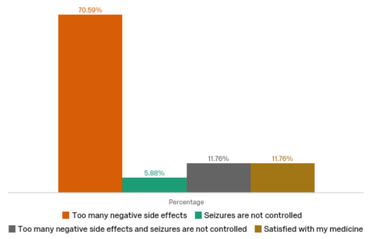
Graph 1.1. Classification of Seizure Type



Graph 1.2. Seizure frequency in the past year



Graph 1.3 Participants Perceptions of AEDs



Graph 1.4 Length of Time Since Last Seizure

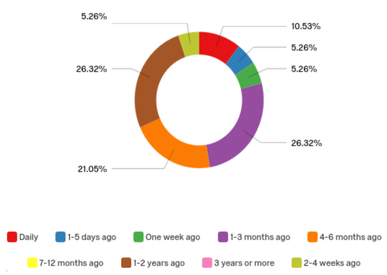


Table 2.1. Medication History

Questions		
How many seizure medications have you tried since your diagnosis?	Value (n)	Percentage (%)
1-3 AEDs*	4	21%
4-6 AEDs	5	26%
7-8 AEDs	4	21%
9 or more	6	32%
Are you currently taking AEDs?		
Yes	18	94.4%
No	1	5.56%
How many AEDs are you currently taking?		
1 AED	8	42.1%
2 AEDs	8	42.1%
3 AEDs	3	15.8%
Are you 100% *completely seizure free?		
Yes	1	5.56%
No	18	94.5%
Are you satisfied with your AED(s)?		
Yes	6	33.3%
No	13	68.4%

Highlights: Findings from Semi-Structured Interviews

Theme 1: Attitudes towards low THC oil and CAM therapy

RQ1. What do you consider to be ***positive outcomes*** of using low THC oil as a form of CAM therapy to treat your epilepsy?

The participants identified several positive outcomes they believed might result from the use of low THC oil to treat their symptoms. The most frequent positive outcomes mentioned were: reduction/control of seizures, complete seizure freedom, fewer side effects, improve mental/emotional state, holistic treatment option, and better quality of life. Multiple participants stated that they were seeking a more holistic approach to treating their epilepsy. Examples of participants' responses:

- *"I would definitely think it will be more effective than my medicine that I take now to stop the breakthrough seizures that I still have even been on medication"- **Participant No. 7.***

RQ2. What do you consider to be negative outcomes of using low THC oil as a form of complementary and alternative medicine (CAM) therapy to treat your epilepsy?

Many of the participants believed that there were minimal adverse outcomes associated with medical cannabis, in which most of them expressed that they would prefer to deal with a few of the adverse outcomes of using low THC oil rather than continuing with their AED medication. However, some of the participants expressed their concerns about the negative stigma associated with cannabis use, fear of losing their job (drug test), dependency/addiction, and fear of low THC oil not being effective, thus continuous seizures. Examples of participants' responses:

- *"When people judge you, that will be the negative outcome. People's attitude towards me when you tell them that you are taking medical cannabis instead of taking regular pills-then taking thousands and something milligrams a day as I do" – **Participant No. 11.***

CONT. RESULTS

Table 3.1 Results from BMQ-E AED Necessity Scale

STATEMENTS	STRONGLY DISAGREE	DISAGREE	UNCERTAIN	STRONGLY AGREE	AGREE	MEAN
WITHOUT MY EPILEPSY MEDICINES, I WOULD BE VERY ILL	5.56% n=1	5.56% n=1	38.89% n=7	38.89% n=7	11.11% n=2	3.44
I WOULD PREFER TO TAKE MY EPILEPSY MEDICINE RATHER THAN RISK HAVING A SEIZURE	5.56% n=1	11.11% n=2	5.56% n=1	50.00% n=9	27.78% n=5	3.83
MY LIFE WOULD BE IMPOSSIBLE WITHOUT MY EPILEPSY MEDICINES	5.56% n=1	5.56% n=1	33.33% n=6	33.33% n=6	22.2% n=4	3.61
MY HEALTH IN THE FUTURE WILL DEPEND ON MY EPILEPSY MEDICINE	0.00	5.56% n=1	22.22% n=4	38.89% n=7	33.33% n=6	4.00
MY HEALTH AT PRESENT DEPENDS ON MY EPILEPSY MEDICINES	5.88% n=1	11.76% n=2	11/76% n=2	47.06% n=8	23.54% n=4	3.71
MY EPILEPSY MEDICINES PROTECT ME FROM BECOMING WORSE	5.8% n=1	11.76% n=2	29.41% n=5	35.29% n=6	17.65% n=3	3.47

Table 4.1 Results from BMQ-E AED Concern Scale

STATEMENT	STRONGLY DISAGREE	DISAGREE	UNCERTAIN	STRONGLY AGREE	AGREE	MEAN
I SOMETIMES WORRY ABOUT THE LONG-TERM EFFECTS OF MY EPILEPSY MEDICINES.	5.56% n=1	0.00%	5.56% n=1	55.56% n=10	33.33% n=6	4.11
I SOMETIMES WORRY THAT MY EPILEPSY MEDICINES AFFECT MY RELATIONSHIP WITH OTHERS.	11.11% n=2	11.11% n=2	5.56% n=1	33.33% n=6	38.89% n=7	3.78
HAVING TO TAKE EPILEPSY MEDICINES WORRIES ME.	5.56% n=1	33.33% n=6	5.56% n=1	16.67% n=3	38.89% n=7	3.50
I SOMETIMES WORRY ABOUT BECOMING TOO DEPENDENT ON MY EPILEPSY MEDICINES.	5.56% n=1	16.67% n=3	5.56% n=1	38.89% n=7	33.33% n=6	3.78
MY EPILEPSY MEDICINE CAUSES UNPLEASANT SIDE EFFECTS.	5.56% n=1	5.56% n=1	11.11% n=2	50.00% n=9	27.78% n=5	3.89
I SOMETIMES WORRY THAT MY ANTI-EPILEPTIC MEDICINES SLOW ME DOWN	5.56% n=1	5.56% n=1	0.00	66.67% n=12	22.22% n=4	3.94
TAKING MY EPILEPSY MEDICINES MAKES ME FEEL LABELLED AS AN "ILL PERSON"	11.11% n=2	38.89% n=7	0.00	27.78% n=5	16.67% n=3	3.11
MY EPILEPSY MEDICINES ARE A MYSTERY TO ME	11.11% n=2	22.22% n=4	22.22% n=4	27.78% n=5	16.67% n=3	3.17
MY EPILEPSY MEDICINES DISRUPT MY LIFE.	11.11% n=2	16.67% n=3	27.78% n=5	27.78% n=5	16.67% n=3	3.22

DISCUSSION

This study employed the theory triangulation by using the TPB constructs to understand the findings better and by obtaining perspectives about the data from different individuals among various disciplines.

Qualitative Component. The semi-structured interviews provided quotes from participants that helped identify categories within the TPB-based themes in response to the research questions.

Theme 1: **Attitudes towards using low THC oil and CAM.**
•Across all the categories and theory-grounded questions, the most prominent perceived advantages of using medical cannabis, more specifically, low THC oil, reported were a reduction of seizures, being 100% seizure free, fewer side effects, improved mental/emotional state, holistic medical treatment option, and better quality of life.

Theme 2: **Perceived Power/ Locus of Control**
•Participants with an internal locus of control believed that they could influence events and their outcomes, which is regarded as independent, while participants with an external locus of control believed that certain events were not from personal volitional action. Instead, they are determined by factors out of their control (Phares, 1965). Obtaining a low THC registry card and purchasing the low THC oil were the two focal events of this study.

Theme 3: Perceived Behavioral Control

•**Factors that facilitated participation in the Georgia Medical Marijuana Program (GMMP).** The TPB model proposes that perceived behavior control reflects people's capability and confidence to perform a behavior (10). Accessible online information about the GMMP and ease of locating a participating physician was seen to potentially motivate individuals to participate in the GMMP. These factors have the potential to increase the adoption of low-THC Oil among individuals with epilepsy. This finding provides some preliminary encouragement to suggest to policymakers to offer incentives to encourage more physicians to accept new patients seeking medical cannabis. It also enhances the GMMP's website, making it more user-friendly by providing up-to-date information about the registration process and offering a list of participating physicians.

Theme 4: Subjective Norms-Approval or disapproval of using low THC Oil.

•**People who approve of the use of low THC oil**. Subjective norm question- items provided a measure of how participants perceived the opinions of family members, friends, and doctors concerning the use of low-THC Oil as a complementary or alternative medical treatment option. The majority of the participants identified family members, spouses, and friends as people who would approve of their decision to use low-THC oil. A small portion of participants reported that their physician would disapprove of their use of low-THC oil. Given that physicians are the primary source of registering patients into the GMMP, this component of the TPB was a particularly important consideration in this study.

From this study, the influence of social pressure perceived by an individual to use or not use low THC oil cannot be denied because all participants agreed resonantly that their families played an important role to approve their decision. Therefore, we theorize that participants tend to conform to the norms of society in making important decisions. Referent groups, such as family members and friends, assert the most social pressure concerning the behavior (11). This hypothesis indirectly suggests that if a participant has a positive experience and attitude towards low THC Oil, the possibility of their perspectives being accepted by their family members and friends are high.

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CONTACT

Shannon Antoine-Hardy, Assistant Professor, Institute of Public Health. Email: shannon.antoinehardy@famu.edu

Joseph Telfair, Professor and Associate Dean for Public Health Practice and Research Georgia Southern University. Email: jtelfair@georgiasouthern.edu

William Mase, Associate Professor, Georgia Southern University. Email: wmase@georgiasouthern.edu

Kelly Sullivan, Associate Professor, Epidemiology, Georgia Southern University. Email: ksullivan@georgiasouthern.edu