Medical Marijuana and Behavioral Health Care: Issues and Opportunities

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As a result of attending this session, you can expect to:

1. Gain knowledge about the basic physiology and pharmacology of the Endogenous Cannabinoid System.
2. Acquire a better understanding of the health risks and benefits associated with cannabis use.
3. Examine the research involving the association between cannabis use and the onset of mental illness and addiction.
5. Explore strategies for integrating client medical marijuana use with other treatment programming.
## Marijuana: Oxymoron of Science & Policy

<table>
<thead>
<tr>
<th>Schedule 1</th>
<th>Schedule 2</th>
<th>Schedule 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heroin</td>
<td>Methamphetamine</td>
<td>Ketamine</td>
</tr>
<tr>
<td>6,235&lt;sup&gt;2013&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSD</td>
<td>Cocaine</td>
<td>Anabolic Steroids</td>
</tr>
<tr>
<td></td>
<td>4,944&lt;sup&gt;2013&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Ecstasy</td>
<td>Opiates</td>
<td>Buprenorphine</td>
</tr>
<tr>
<td></td>
<td>16,235&lt;sup&gt;2013&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Peyote</td>
<td>Nabilone*</td>
<td>Dronabinol*</td>
</tr>
</tbody>
</table>

Deaths related to alcohol: 29,001<sup>2013</sup>

Deaths related to marijuana: 0<sup>2013</sup>
So why does Medical Marijuana exist?
Medical Marijuana in Arizona
72,478 active card holders, April 2015
PTSD was added in January 2015 and is the designated qualifying condition for 0.52% of the Arizona MMJ population.
Gender Distribution among Age Groups in the Arizona MC Population (N=70,189)

Female (N=23,306)

Male (N=46,883)

Mean: 43.9 (SD 15.4)
Medical Marijuana Across the US

*Medical Cannabis laws in 1+ city
Medical Marijuana Across the US

Top 10 Conditions Covered by State Medical Cannabis Programs + PTSD (%)

- Muscle Spasms
- MS
- Hepatitis C
- HIV/AIDS
- Seizures
- Nausea
- Cachexia
- Glaucoma
- PTSD
- Cancer
- Pain

Pain, Cancer, PTSD, Glaucoma, Cachexia, Nausea, Seizures, HIV/AIDS, Hepatitis C, Muscle Spasms, MS

0 20 40 60 80 100
What do we know about the *Cannabis* plant?

- **Terpenes**
- **Flavonoids**
- **Cannabinoids**
Marijuana is *not* THC. Some cannabinoids are non-psychoactive, such as CBD and CBG.
The Endogenous Cannabinoid System (ECS)

- Emotion & Stress
- Neurodevelopment
- Appetite & Metabolism
- Immune Function & Pain
Health Risks and Benefits
Health Risks and Benefits

Has short-term memory loss

Remembers how to speak Whale
Health Risks and Benefits: Cannabis & Development

Zalesky, Solowij, Yucel, Lubman, Takagi, Harding & Seal, 2012
## Health Risks and Benefits: Substance Abuse Disorders & Addiction

<table>
<thead>
<tr>
<th>Cause of death (Data from 2013 unless otherwise noted)</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Causes</td>
<td>2,596,993</td>
</tr>
<tr>
<td>Major Cardiovascular Diseases [MCD]</td>
<td>796,494</td>
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<tr>
<td>Cerebrovascular Diseases [subset of MCD]</td>
<td>128,978</td>
</tr>
<tr>
<td>Essential Hypertension and Hypertensive Renal Disease [subset of MCD]</td>
<td>30,770</td>
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<tr>
<td>Malignant Neoplasms [Cancer]</td>
<td>584,881</td>
</tr>
<tr>
<td>Chronic Lower Respiratory Diseases</td>
<td>149,205</td>
</tr>
<tr>
<td>Accidents (Unintentional Injuries) [Total]</td>
<td>130,557</td>
</tr>
<tr>
<td>Motor Vehicle Accidents [subset of Total Accidents]</td>
<td>35,369</td>
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<tr>
<td>Alzheimer's Disease</td>
<td>84,767</td>
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<tr>
<td>Diabetes Mellitus</td>
<td>75,578</td>
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<tr>
<td>Influenza and Pneumonia</td>
<td>56,979</td>
</tr>
<tr>
<td>Nephritis, Nephrotic Syndrome and Nephrosis</td>
<td>47,413</td>
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<tr>
<td><strong>Drug-Induced Deaths</strong></td>
<td><strong>46,471</strong></td>
</tr>
<tr>
<td>Intentional Self-Harm (Suicide)</td>
<td>41,149</td>
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<tr>
<td>Septicemia</td>
<td>50,150</td>
</tr>
<tr>
<td>Chronic Liver Disease and Cirrhosis</td>
<td>36,427</td>
</tr>
<tr>
<td>Alcoholic Liver Disease [subset of Chronic Liver Disease]</td>
<td>18,146</td>
</tr>
<tr>
<td>Injury by Firearms</td>
<td>33,636</td>
</tr>
<tr>
<td>Alcohol-Induced Deaths</td>
<td>29,001</td>
</tr>
<tr>
<td>Parkinson's Disease</td>
<td>25,196</td>
</tr>
<tr>
<td>Pneumonitis Due to Solids and Liquids</td>
<td>18,579</td>
</tr>
<tr>
<td>Homicide</td>
<td>16,121</td>
</tr>
<tr>
<td>Viral Hepatitis</td>
<td>8,157</td>
</tr>
<tr>
<td>Human Immunodeficiency Virus (HIV) Disease</td>
<td>6,955</td>
</tr>
<tr>
<td><strong>All Illicit Drugs Combined (2000)</strong></td>
<td><strong>17,000</strong></td>
</tr>
<tr>
<td>Cannabis (Marijuana)</td>
<td>0</td>
</tr>
</tbody>
</table>
Cannabinoids & Reward

- Seeking Behavior
- Relapse
- SA Treatment
Reduced opioid mortality in states with medical marijuana

Bachhuber, Saloner, Cunningham & Barry, 2014
Evidence for & against use in Mental Health

Crowe, Nass, Gabella & Kinsey, 2014
Effects on Symptoms

Improved

- Sleep Disturbance
- Re-experience
- Negative Affect
- Hyperarousal
- Anxiety

No Consensus

- Numbing,
- Anxiety following cessation
Anxiety

Decreased AEA, 2-AG
Decreased CB2R
CB1 activation (H)
CB1 blockade

Elevated AEA, 2-AG
CB2R overexpression
CB1 activation (L)
CB2 activation
Antidepressant Effect

- Prevention of over-excitation
- Increase in hippocampal serotonin activity
- Reduced stress axis activation/anxiety
- Neurogenesis
- Reduction of inflammation
Bipolar/Affective Disorder

Global Functioning, Depressive Symptoms

Cannabinoids share many characteristics of drugs used to treat BAD

Elevated Mood, Mania Symptoms

Patients poorly managed on current treatments report benefits
Cannabis during adolescence and/or adulthood → Schizophrenia or Schizoaffective Disorder

THC/High THC strains → Increased AEA

CBD → Psychotic Symptoms

Psychotic Symptoms
Medical Marijuana & Mental Health: Results from a Preliminary Study

Top 3 Qualifying Conditions among Dispensary Sample & Greater Arizona MC Population

- Nausea: 0.9%
- Muscle Spasms: 1.2%
- Chronic Pain: 83.3%

- Chronically: 89.8%
Medical Marijuana & Mental Health: Results from a Preliminary Study

Qualifying Conditions among Dispensary Sample & Greater Arizona MC Population

- Cachexia
- Crohn's Disease
- MS
- Glaucoma
- Seizures
- HIV/AIDS
- Hepatitis C
- Cancer

Arizona MC Population vs Dispensary Sample
Medical Marijuana & Mental Health: Results from a Preliminary Study

Mental Health (MH) Diagnoses among Dispensary Sample

- None
- Other
- Schizophrenia/Schizoaffective...
- Personality Disorders
- Bipolar or Affective Disorder
- Major Depressive Disorder
- Anxiety Disorders & PTSD

[Bar chart showing the percentage distribution of mental health diagnoses among the dispensary sample.]
Medical Marijuana & Mental Health: Results from a Preliminary Study

Psychiatric Medication Use

- Anti-psychotic
- Anti-anxiety & Anti-depressant
- Anti-anxiety
- Anti-depressant

- 1+ MI Sample
- Dispensary Sample

0% 10% 20% 30% 40% 50%
Medical Marijuana & Mental Health: Results from a Preliminary Study

Significant Improvement upon Cannabis Ingestion (%)

- Major Depression: 80.2%
- Muscle Tension: 95.4%
- Feeling Irritable: 91.1%
- Restless/On Edge: 90.1%
- Excessive Worry/Anxiety: 89.0%
- Agitated/Listless: 90.6%
- Sleeping Difficulties: 98.2%
- Lack of Interest in Most Activities: 87.4%
- Depressed Mood: 96.0%
Why only PTSD?

Recommendations based solely on human studies

Majority of permitted human studies funded by NIDA/NIH

Human studies not representative of whole plant use
Quick Review

- Cannabis as therapy for MH symptoms
- Adjunct therapy for SA treatment & pain management
- ECS Dysfunction in MH illness
- Potentially harmful prior to adulthood
- Not for everyone: abuse potential
The Medical Marijuana Experience
Methods of Consumption

[Images of various consumption methods]
Don’t be put off by the crazy names...

- Blue Dream
- Train Wreck
- SKYWALKER OG
- Girl Scout Cookies
- Sour Diesel
- Blue Cheese
- Bruce Banner #3
How do I counsel patients who are interested in Medical Marijuana?

- Do you know what the qualifying conditions are in Arizona?
- Have you tried marijuana in the past?
- What do you know about methods of consuming cannabis?
- In what way do you think it will help you?

PTSD is the only qualifying psychiatric condition in 2015.
How do I counsel/assess patients already using Medical Marijuana?

Similar to counseling patients on any new medication with abuse potential*.

*dosing guidelines inconsistent
What if I believe a patient with a non-qualifying condition would benefit from Medical Marijuana?

Practitioners & patients can submit petitions to ADHS to add debilitating conditions several times throughout the year.

Upcoming: *July 27-31, 2015*
“We need to recognize that the issue must bypass our philosophical bias as to whether marijuana is good or bad, and focus our attention on efficacy, safety, and risk versus benefit.”

Gerold Aronoff, MD
Past President of The American Academy of Pain Medicine

Questions?