

INTRODUCTION • AT THE END OF THE SESSION, YOU WILL

• ASSESS THE USE AND IMPACT (SIDE EFFECTS) OF MARIJUANA ON PATIENTS

- EXPLORE CANNABIS THERAPY—LEGALITY AND PRACTICALITY
- POSSESS STRATEGIES TO PROVIDE PSYCHO-EDUCATIONAL INFORMATION TO CLIENTS ABOUT HEALTH IMPACTS OF MARIJUANA USE

WHAT IS MARIJUANA

- MARIJUANAIS <u>MADE FROM</u> THE DRIED LEAVES, STEMS, FLOWERS, AND SEEDS OF CANNABIS AND CONTAINS
 THE MIND-ALTERING CHEMICAL DELTA-9-TETRAHYDROCANNABINOL (THC)
- IT IS <u>smoked</u>, <u>brewed</u> as tea, or <u>mixed in food</u> (often mixed with other chemicals)
- <u>MEDICAL MARIJUANA</u> IS AVAILABLE IN A NUMBER OF DIFFERENT FORMS, INCLUDING PILLS, OILS, VAPORIZED LIQUIDS, NASAL SPRAYS, DRIED LEAVES AND BUDS, AND PLANTS.
- SMOKING IS THE <u>FASTEST WAY</u> TO DELIVER THC TO THE <u>BRAIN</u> WHERE IT TARGETS CANNABINOID RECEPTORS
 THESE RECEPTORS ARE PART OF THE ENADOAUMABINDID SYSTEM UPUBLIC ADJUNCTOR OF UPUBLIC
- THESE RECEPTORS ARE PART OF THE <u>Endocannabinoid system</u>, which is activated by Naturally
 Occurring Bodily Chemicals and is important in Normal Brain Development and Functioning
 Marijuana use varies, with <u>Heavy Marijuana use</u> most often classified as use of one or more
- JOINTS PER DAY

WHAT IS MARIJUANA-IMPACT UN

BRAIN As Marijuana enters the brain, it acts on the areas with many cannabinoid receptors, WHICH ARE PREDOMINATELY IN AREAS OF THE BRAIN THAT AFFECT:

- PLEASURE
- MEMORY
- THINKING
- CONCENTRATION • SENSORY/TIME PERCEPTION
- COORDINATED MOVEMENT



WHAT IS MARIJUANA-**BRAIN & BEHAVIOR**

- SMOKING EFFECTS ARE:
- USUALLY IMMEDIATE
- LASTING AS LONG AS 3 HOURS
- THE HIGH FROM INGESTING CANNABIS USUALLY OCCURS WITHIN 30 MINUTES TO AN HOUR
- HAS BEEN FOUND TO LAST OVER 4 HOURS
- AS THE HIGH DISSIPATES, THE PERSON MAY FEEL SLEEPY OR DEPRESSED. WITHDRAWAL SYMPTOMS INCLUDE ANXIETY, INSOMNIA, IRRITABILITY, AND DEPRESSION

WHAT IS MARIJUANA-BRAIN & BEHAVIOR

- MARIJUANA CAN CAUSE PROBLEMS WITH <u>LEARNING AND MEMORY</u> VIA ITS EFFECT ON THE HIPPOCAMPUS
- IN THE CEREBELLUM, WHICH CONTROLS <u>Coordination and Balance</u>, Marijuana May Impair <u>Physical Functions</u> (such as driving)
- IMPAIRED JUDGMENT AND CONTROL, AS A RESULT OF MARIJUANA'S EFFECTS ON THE FRONTAL CORTEX, MAY LEAD TO ENGAGING IN <u>Risky activities</u> such as UNPROTECTED SEX OR CRIMINAL BEHAVIOR

POTENTIAL SIDE EFFECTS • The physiological side effects of marijuana have been <u>difficult</u>

THE PHYSIOLOGICAL SIDE EFFECTS OF MARIJUANA HAVE BEEN <u>difficult</u> <u>To delineate</u> because it is <u>frequently used concurrently</u> with Alcohol and Nicotine.

- THERE IS EVIDENCE OF AN INCREASED RISK FOR:
 - BRONCHITIS
 - •EMPHYSEMA
 - PNEUMONIA
 - LUNG CANCER FROM SMOKING MARIJUANA

POTENTIAL SIDE EFFECTS

•SEVERAL FACTORS MAY BE ASSOCIATED WITH THIS:

- MARIJUANA CONTAINS THE <u>SAME CARCINOGENS AS TOBACCO</u>,
- IS INHALED MORE DEEPLY THAN NICOTINE,
- MORE OF THE <u>tar and other carcinogens</u> released from smoking marijuana are <u>retained in the lungs</u>.

LEGALIZING MARIJUANA

- MARIJUANA IS THE <u>most widely used illicit drug</u> in the united states
- — BUT THE TERM "ILLICIT" MAY NOT APPLY MUCH LONGER.
- <u>TWENTY-NINE STATES</u> AND THE DISTRICT OF COLUMBIA CURRENTLY HAVE LAWS BROADLY LEGALIZING MARIJUANA IN SOME FORM.
- ACCEPTANCE OF MARIJUANA IS GROWING (AHEM) LIKE A WEED.

STATES

- SEVEN STATES AND THE DISTRICT OF COLUMBIA HAVE ADOPTED THE MOST EXPANSIVE LAWS LEGALIZING MARIJUANA FOR RECREATIONAL USE.
- MOST RECENTLY, CALIFORNIA, MASSACHUSETTS, MAINE AND NEVADA <u>All Passed</u> <u>Measures</u> in November Legalizing Recreational Marijuana.
- CALIFORNIA'S PROP. 64 MEASURE ALLOWS ADULTS 21 AND OLDER TO POSSESS UP TO ONE OUNCE OF MARIJUANA AND GROW UP TO SIX PLANTS IN THEIR HOMES.
- OTHER TAX AND LICENSING PROVISIONS OF THE LAW TOOK EFFECT IN JANUARY 2018.

LEGALIZATION

- THOSE LAWS ARE NOT WITHOUT CONTROVERSY.
- AMONG THE <u>Critics' concerns</u> is the worry that, despite age Limits, legalization <u>might make marijuana more accessible to</u> <u>Young People</u>
- ADOLESCENTS' DEVELOPING BRAINS MAY BE PARTICULARLY <u>VULNERABLE</u> TO LASTING DAMAGE FROM THE DRUG.

LEGALIZATION

- THERE ARE A LOT OF "OPEN QUESTIONS" ABOUT THE LONG-TERM EFFECTS OF MARIJUANA,
- "BUT THERE'S A GROWING LITERATURE, AND IT'S ALL POINTING IN THE SAME DIRECTION:
- STARTING YOUNG AND USING FREQUENTLY MAY DISRUPT BRAIN DEVELOPMENT."

• SUSAN WEISS, PHD, DIRECTOR OF THE DIVISION OF EXTRAMURAL RESEARCH AT THE NATIONAL INSTITUTE ON DRUG ABUSE (NIDA

MEDICAL MARIJUANA

- ALSO REFERRED TO AS "MEDICAL CANNABIS," MEDICAL MARIJUANA REFERS TO MARIJUANA <u>USED TO TREAT A DISEASE AND/OR EASE ITS SYMPTOMS.</u>
- IT MAY BE USED FOR THE <u>Short-term or for years</u>, depending on why it is being used.
- ACCORDING TO THE NIH'S NATIONAL CENTER FOR COMPLEMENTARY AND INTEGRATIVE HEALTH, MEDICAL MARIJUANA IS NOT ALL THAT NEW.
- IN FACT, <u>PEOPLE HAVE BEEN USING IT FOR MORE THAN 3,000 YEARS.</u>

MEDICAL MARIJUANA

- •A GROWING BODY OF <u>Scientific Research</u> now points to the <u>Benefits</u> of medical Marijuana and thc.
- "THC CAN <u>INCREASE APPETITE</u> AND <u>REDUCE NAUSEA</u>. THC MAY ALSO <u>DECREASE PAIN, INFLAMMATION</u> (SWELLING AND REDNESS), AND <u>MUSCLE CONTROL PROBLEMS.</u>"

MEDICAL MAKIJUANA

• MORE SPECIFICALLY, IT'S USED TO TREAT A NUMBER OF DIFFERENT HEALTH CONDITIONS, INCLUDING THE FOLLOWING, AS IDENTIFIED BY THE MAYO CLINIC:

- AMYOTROPHIC LATERAL SCLEROSIS (ALS)
- **•**ANOREXIA DUE TO HIV/AIDS
- CHRONIC PAIN
- **CROHN'S DISEASE**
- •EPILEPSY OR SEIZURES

(CONTINUES NEXT SLIDE)

MEDICAL MARIJUANA • GLAUCOMA

- MULTIPLE SCLEROSIS OR SEVERE MUSCLE SPASMS
- •NAUSEA, VOMITING OR SEVERE WASTING ASSOCIATED WITH CANCER TREATMENT
- TERMINAL ILLNESS
- TOURETTE SYNDROME

MEDICAL MARIJUANA

- THE <u>SAFETY OF MEDICAL MARIJUANA IS UNDER DEBATE</u> DUE TO ITS POTENTIAL SIDE EFFECTS.
- THE FOOD AND DRUG ADMINISTRATION (FDA) HAS <u>APPROVED TWO SYNTHETIC FORMS</u> **OF LEGALLY PRESCRIBED MARIJUANA:**
- DRONABINOL
- NABILONE
- CLINICAL RESEARCH PROJECTS ARE UNDERWAY AIMED AT INVESTIGATING POTENTIAL NEW TYPES OF MARIJUANA-BASED DRUGS AND THEIR POTENTIAL TO TREAT EVERYTHING FROM HIV AND AIDS TO MENTAL DISORDERS.

MEDICAL MAKIJUANA

 MARIJUANA SHOWS <u>Considerable promise</u> for treating medical conditions including:

- PAIN,
- MUSCLE SPASMS,
- SEIZURE DISORDERS
- NAUSEA FROM CANCER CHEMOTHERAPY.

 AT LEAST SOME OF THOSE BENEFITS ARE THOUGHT TO COME FROM CANNABIDIOL, A CHEMICAL COMPONENT OF THE MARIJUANA PLANT NOT THOUGHT TO PRODUCE MIND-ALTERING EFFECTS.

MEDICAL MARIJUANA

- •BUT THERE'S <u>A lot left to learn</u> about this and other Chemical compounds in Marijuana.
- RECENTLY, THE <u>SENATE RECOMMENDED \$800,000</u> FOR AN <u>INSTITUTE OF MEDICINE STUDY</u> ON <u>MEDICAL MARIJUANA</u>, AND HAS ALSO <u>ENCOURAGED THE NATIONAL INSTITUTES OF HEALTH</u> TO SUPPORT MORE RESEARCH ON <u>CANNABIDIOL</u>.

MEDICAL MARIJUANA

- •MARIJUANA'S SIGNATURE HIGH COMES FROM A Psychoactive component known as Tetrahydrocannabinol (THC).
- EVIDENCE IS MOUNTING,
- •THC IS NOT RISK-FREE.

IMPACT OF MARIJUANA USE

- THOSE EFFECTS CAN LAST FOR DAYS AFTER THE HIGH WEARS OFF.
- HEAVY MARIJUANA USE IN ADOLESCENCE OR EARLY ADULTHOOD HAS BEEN Associated with a dismal set of life outcomes including:
- POOR SCHOOL PERFORMANCE,

(CONTINUES NEXT SLIDE)

IMPACT OF MARIJUANA USE

- HIGHER DROPOUT RATES,
- INCREASED WELFARE DEPENDENCE,
- GREATER UNEMPLOYMENT
- LOWER LIFE SATISFACTION.

VULNERABILITY FACTORS

- BUT IT'S NOT CLEAR THAT MARIJUANA DESERVES THE BULK OF THE BLAME.
- SOME RESEARCHERS HAVE SUGGESTED THAT FACTORS SUCH AS:
- PEER INFLUENCE,

• EMOTIONAL DISTRESS

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VULNERABILITY FACTORS * A TENDENCY TOWARD PROBLEM BEHAVIOR

- COULD <u>PREDISPOSE PEOPLE</u> TO DRUG USE AS WELL AS POOR LIFE
- OUTCOMES. • "IS MARIJUANA THE <u>CAUSAL AGENT IN THESE OUTCOMES, OR IS IT PART OF</u> <u>A VARIETY OF VULNERABILITY FACTORS</u>?"

MARIJUANA STUDY

DUKE UNIVERSITY PSYCHOLOGIST TERRIE MOFFITT, PHD, AND COLLEAGUES

- DUNEDIN MULTIDISCIPLINARY HEALTH AND DEVELOPMENT STUDY, Longitudinal Research
- FOLLOWED 1,000 NEW ZEALANDERS BORN IN 1972.
- PARTICIPANTS <u>Answered Questions</u> about Marijuana USE at 18, 21, 26, 32 and 38. They also <u>Underwent Neuropsychological Testing</u> at ages 13 and 38.

MARIJUANA STUDY

DUKE UNIVERSITY PSYCHOLOGIST TERRIE MOFFITT, PHD, AND COLLEAGUES

- THE TEAM FOUND THAT <u>persistent marijuana</u> use was linked to a <u>decline in iq</u>
- EVEN AFTER THE RESEARCHERS <u>CONTROLLED FOR EDUCATIONAL DIFFERENCES</u>.
 THE <u>MOST PERSISTENT USERS</u> THOSE WHO REPORTED USING THE DRUG IN THREE
 OR MORE WAVES OF THE STUDY EXPERIENCED A <u>DROP</u> IN NEUROPSYCHOLOGICAL
 FUNCTIONING EQUIVALENT TO <u>ABOUT SIX IQ POINTS</u>.
- "THAT'S IN THE SAME REALM AS WHAT YOU'D SEE WITH LEAD EXPOSURE,
- "IT'S NOT A TRIFLE."

BRAIN UNDER CONSTRUCTION: Adolescence

- THERE ARE SOME REASONS TO THINK THAT ADDLESCENTS MAY BE <u>uniquely</u> <u>susceptible</u> to lasting damage from Marijuana use. <u>At least until the early</u> <u>or Mid-20s.</u>
- "THE BRAIN IS STILL UNDER CONSTRUCTION,"
- DURING THIS PERIOD OF NEURODEVELOPMENT, THE BRAIN IS THOUGHT TO BE <u>PARTICULARLY SENSITIVE</u> TO DAMAGE FROM DRUG EXPOSURE.
- THE <u>FRONTAL CORTEX</u> THE REGION CRITICAL TO PLANNING, JUDGMENT, DECISION-Making and Personality — Is **one of the last areas to fully develop**

BRAIN UNDER CONSTRUCTION: ADOLESCENCE

- ALSO <u>IMMATURE IN TEENS</u> IS THE <u>ENDOCANNABINOID SYSTEM</u>.
- AS ITS NAME IMPLIES, THIS SYSTEM COMPRISES THE <u>Physiological mechanisms</u> <u>That respond to thc.</u>
- THAT SYSTEM IS IMPORTANT FOR COGNITION, NEURODEVELOPMENT, STRESS RESPONSE AND EMOTIONAL CONTROL, AND IT <u>HELPS TO MODULATE OTHER MAJOR</u> NEUROTRANSMITTER SYSTEMS.

AFFECTED POPULATIONS

• MARIJUANA USE HAS BEEN FOUND TO BE:

- HIGHER IN MALES AGES 18 TO 29
- AMONG INDIVIDUALS REPORTING ANY LIFETIME PSYCHIATRIC
 DISORDER
- ATTENTION DEFICIT HYPERACTIVITY DISORDER
- MOOD OR ANXIETY DISORDER

AFFECTED POPULATIONS

• ACCORDING TO AN ARTICLE BY LOPEZ AND COLLEAGUES.

- ADOLESCENTS PRENATALLY EXPOSED TO MARIJUANA ARE MORE LIKELY TO USE THE DRUG.
- EVIDENCE REGARDING MARIJUANA <u>USE BASED ON ETHNICITY DIFFERS</u>
- STUDIES SUGGEST <u>Higher</u> Marijuana use and dependence in <u>Minority</u> <u>Groups</u>
- LOW-INCOME YOUTH ARE MORE LIKELY TO USE MARIJUANA AS AN <u>Entry Drug</u>, Which May be because it is less expensive and more accessible than Cigarettes.

AFFECTED POPULATIONS

•USE AMONG THE ELDERLY

•MESSAGE TO ELDERLY ABOUT MJ USE:

- **•**CAN REDUCE PRESCRIPTION DRUG DEPENDENCY
- IMPROVES MOOD
- **CAN HELP FIGHT DEPRESSION**
- •TREATING PAIN

AFFECTED POPULATIONS

• USE AMONG THE ELDERLY

• GROWING SENIOR POPULATION ASSOCIATED WITH THE AGING OF THE MASSIVE BABY BOOMER GENERATION

- Increasing knowledge about the <u>Benefits</u> of Medical Marijuana
- MORE SENIORS ARE "JUST SAYLING! YES" TO THE DRUG.

AFFECTED POPULATIONS

• EVEN MORE SURPRISING?

- SENIORS HAVE BEEN AT THE FOREFRONT OF THE CAMPAIGN FOR THE LEGALIZATION OF MARIJUANA FOR MORE THAN A DECADE,
- ACCORDING TO A POLL CONDUCTED FOR THE AMERICAN ASSOCIATION OF RETIRED PERSONS (AARP), WHICH REVEALED
- JUST UNDER THREE-QUARTERS OF PEOPLE OVER THE AGE OF 45 BELIEVED THAT "<u>ADUITS</u> should be allowed to legally use marijuana for medical purposes if a physician recommends II."

AFFECTED POPULATIONS

- <u>DR. IGOR GRANT</u>, A DISTINGUISHED PROFESSOR AND CHAIR OF THE DEPARTMENT OF PSYCHIATRY AT THE UNIVERSITY OF CALIFORNIA, SAN DIEGO, STATES,
- "THERE IS INCREASING EVIDENCE THAT CANNABIS IS HELPFUL IN THE MANAGEMENT OF
 CERTAIN KINDS OF PAIN."
- WHICH TYPES OF PAIN, EXACTLY? THE TYPE OFTEN EXPERIENCED BY OLDER ADULTS, INCLUDING EVERYTHING FROM
- ARTHRITIS
- TO CHEMOTHERAPY

AFFECTED POPULATIONS

- BUT SENIORS HAVE MORE TO OFFER THAN ENTHUSIASM TO THEIR PEERS WONDERING WHETHER OR NOT TO TRY MEDICAL MARIJUANA.
- WE CAUTION, ESPECIALLY THE SENIORS,
 - STAY AWAY FROM EDIBLES,
 - REALLY START SLOW. LOW DOSAGE
 - START IN THE EARLY EVENING,
 - NOT TO DRIVE,
 - NOT TO MIX ALCOHOL.
 - THERE'S A LOT OF CAUTIONS, A LOT OF EDUCATION THAT GOES ALONG WITH IT

PRO & CON ARGUMENTS Should MJ be a medical option?

- PHYSICIAN PERSPECTIVES
- MEDICAL ORGANIZATIONS' OPINIONS
- US GOVERNMENT OFFICIALS' VIEWS
- HEALTH RISKS OF SMOKED MARIJUANA
- MORE PHYSICIAN PERSPECTIVES

PRO & CON ARGUMENTS Should MJ be a medical option?

• MARIJUANA AND PAIN

- MARIJUANA VS. MARINOL
- ADDICTIVENESS OF MARIJUANA
- "GATEWAY" EFFECT
- MEDICAL MARIJUANA USE BY KIDS

IMPLICATIONS FOR NURSING

- TOUCHING THE LIVES OF MILLIONS EVERY DAY AS YOU DO, NURSES ARE IN A UNIQUE
 POSITION TO AFFECT THE WAY THE NATIONAL DEBATE PROGRESSES ON THE
 LEGALIZATION OF RECREATIONAL MARUUANA.
- THE DIVERSITY OF NURSING PRACTICE AFFORDS THE OPPORTUNITY TO AFFECT THE CONVERSATION AND EDUCATE THE PUBLIC AND HEALTHCARE PROFESSIONALS ALIKE.
- BY <u>staying current</u> with the latest literature, and discussing the <u>latest</u> <u>evidence-based information</u> with nursing colleagues and other healthcare professionals, you can begin to fully understand the impact of cannabis on adolescent health and work together to make a difference.

IMPLICATIONS FOR NURSING

• SCHOOL NURSES INTERACT WITH YOUTH EVERY DAY.

- THEY CAN <u>PROVIDE PROFESSIONAL INPUT</u> INTO <u>DEVELOPING PROGRAMS</u> ON DRUG ABUSE AND ITS POTENTIAL EFFECTS.
- <u>Building relationships</u> with students who trust the nurse will make it more likely that they'll turn to the nurse in times of stress.
- BY <u>EDUCATING FACULTY</u> ABOUT THE EFFECTS OF MARLIUANA ON YOUTH, NURSES WILL HELP CREATE A TEAM OF <u>Supportive</u>, Caring adults to <u>Educate</u> and <u>Protect Children</u> as they progress through difficult life stages and situations.

IMPLICATIONS FOR NURSING

• BY <u>DISCUSSING RECREATIONAL MARIJUANA</u> USE WITH <u>HIGH-RISK GROUPS</u> SUCH: • AS YOUNG WOMEN OF CHILD-BEARING AGE

•ADOLESCENTS FROM HIGH-RISK GROUPS,

•NURSES CHANGE LIVES.

IMPLICATIONS FOR NURSING

- JUST AS NURSES BECAME INVOLVED IN EDUCATING THE PUBLIC ABOUT THE RISKS OF LOW FOLIC ACID AND ITS EFFECT ON THE FETUS,
- WE CAN EDUCATE ABOUT THE **RISK TO YOUTH** IF MARIJUANA IS LEGALIZED—
- NOT JUST ITS USE,
- BUT ALSO ABOUT <u>The Message</u> that legalization brings to youth that Marijuana is harmless.

IMPLICATIONS FOR NURSING

- NURSES CAN <u>Initiate</u> and <u>be involved in prevention</u> programs.
- WE CAN HELP TEENS BEGIN <u>PEER-SUPPORT GROUPS</u>, WHICH HAVE BEEN EFFECTIVE IN HELPING ADOLESCENTS AVOID AND REDUCE HIGH-RISK BEHAVIORS.

IMPLICATIONS FOR NURSING

- LAW-ENFORCEMENT AND HEALTHCARE PROFESSIONALS HAVE BEEN WORKING TOGETHER IN MANY Communities to provide rehabilitation and support, <u>rather than incarceration</u>, for youth Accused of crimes involving drugs (including marijuana).
- NURSES WHO WORK WITH AT-RISK YOUTH HAVE AN OPPORTUNITY TO <u>Replicate these programs</u> in Their communities.
- YOU CAN <u>STAY ACTIVE IN PROFESSIONAL NURSES' ORGANIZATIONS.</u>
- EDUCATE <u>PUBLIC OFFICIALS</u> AND OTHERS ABOUT THE EFFECTS OF MARIJUANA ON ADOLESCENTS AND OTHERS.
- AND, YES, NURSES VOTE!

IMPLICATIONS FOR NURSING

- CAN RECREATIONAL MARIJUANA BE DECRIMINALIZED WITHOUT LEGALIZING IT?
- WHAT IS THE <u>best way to educate women of Child-Bearing age</u> about the potential dangers of prenatal exposure to marijuana?
- HOW CAN WE <u>Protect and Educate Vulnerable Populations</u> about Marijuana, especially
 minority adolescents and youth living in High-Risk Situations?
- WHAT CAN NURSES DO <u>TO ADDRESS THE NEEDS OF AT-RISK YOUTH ALREADY SUFFE</u>RING FROM THE Consequences of <u>Prenatal</u> or <u>Addlescent</u> Exposure to Marijuana?

IS MEDICAL MARIJUANA RIGHT FOR YOU?

- THERE'S NO ONE-SIZE-FITS-ALL ANSWER TO THIS QUESTION
- <u>NO CLEAR-CUT REASON FOR SENIORS TO RULE IT OUT</u> AS A POSSIBILITY. FOR THOSE SUFFERING FROM UNCOMFORTABLE SYMPTOMS RELATED TO A <u>CHRONIC DISEASE</u> OR SIDE EFFECTS OF MEDICAL TREATMENT
- MARIJUANA <u>MAY OFFER NEW HOPE IN MANAGING</u> AND <u>Alleviating</u> PAIN
 AND NAUSEA.

