COMORBID SUBSTANCE USE AND MENTAL HEALTH DISORDERS:

A DIAGNOSTIC CONUNDRUM

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OVERVIEW OF PRESENTATION

- MI Vs Addiction
- Comorbidity Vs Causality
- DSM 5 Criteria
- Epidemiological Data
- How to Approach
- Amphetamine Induced Psychosis
- Cannabis Induced Psychosis

IS DRUG ADDICTION A MENTAL ILLNESS?

IS DRUG ADDICTION IS A MENTAL ILLNESS?

- ***Addiction changes the brain, disturbing the normal hierarchy of needs and desires.***

- Resulting in compulsive behaviors that override the ability to control impulses despite the consequences …….???similar to hallmarks of other mental illnesses.

COMORBIDITY

- When two disorders or illnesses occur in the same person, simultaneously or sequentially, they are described as comorbid.

- Comorbidity also implies interactions between the illnesses that affect the course and prognosis of both.

WHAT YOU NEED TO REMEMBER

- Surveys show that drug abuse and other mental illnesses are often co morbid.
- As many as ***half*** of people who have an illicit drug use disorder also suffer from mental illnesses.

WHAT YOU NEED TO REMEMBER

- Data show that persons diagnosed with mood or anxiety disorders are about **twice** as likely to suffer also from a drug use disorder

- The same is true for those diagnosed with an antisocial syndrome, such as antisocial personality or conduct disorder.

- Similarly, persons diagnosed with drug disorders are roughly **twice** as likely to suffer also from mood and anxiety disorders.

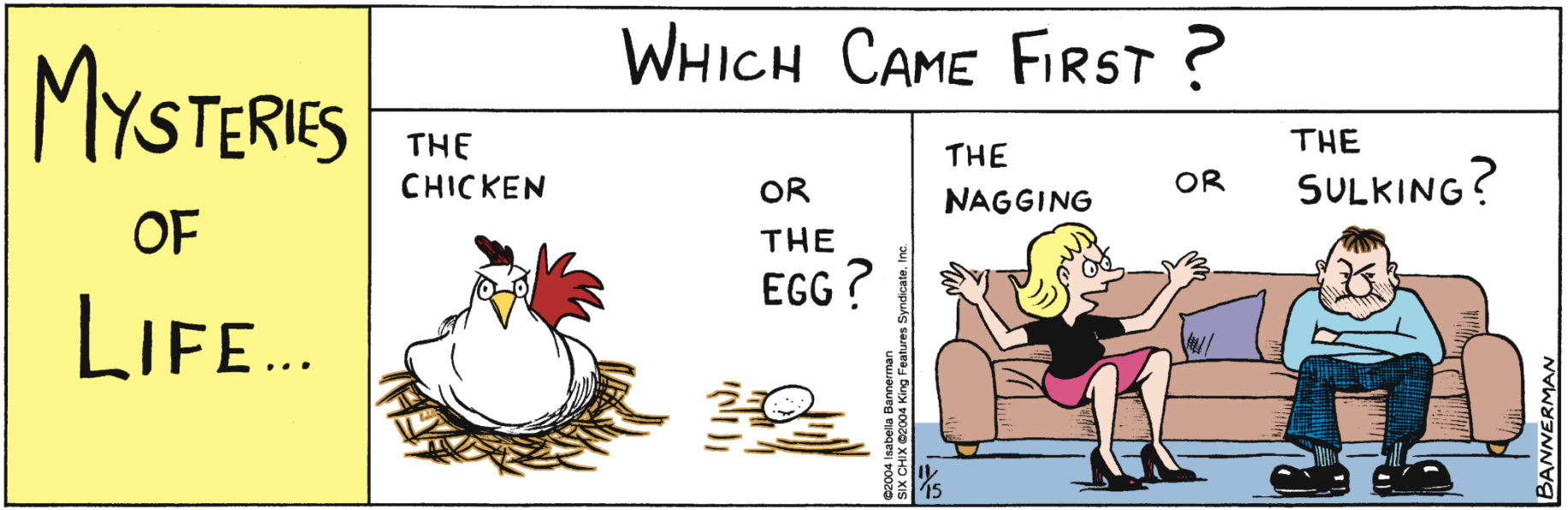
Table 1: Ten leading causes of burden of disease and injury in 15–24 year olds in Australia in rank order

Males	Females
1. road traffic accidents	1. depression
2. alcohol dependence	2. bipolar affective
3. suicide	3. alcohol dependence
4. bipolar affective	4. eating disorders
5. heroin dependence	5. social phobia
6. schizophrenia	6. heroin
7. depression	7. asthma
8. social phobia	8. road traffic accidents
9. borderline personality	9. schizophrenia
10. generalised anxiety disorder	10. generalised anxiety disorder

IMPACT ON HEALTH ECONOMICS

CAUSALITY ??

- High prevalence of these comorbidities does not mean that one condition caused the other, even if one appeared first.



CAUSALITY?

- Three scenarios that we should consider:
  - drug abuse can cause a mental illness (THC and psychosis)
  - mental illness can lead to drug abuse (Schizophrenia and tobacco)
  - drug abuse *and mental disorders are both caused by other common risk factors (stress, trauma, genes, brain deficits)*

- In reality, all three scenarios can contribute, in varying degrees, to the establishment of specific comorbid mental disorders and addiction.

SIMPLE ENOUGH…

- What about
  - Substance Induced Disorder in a patient with Independent mental illness.

- Ongoing drug use
- Polydrug use
- Recall bias
- Attribution bias
- Previous diagnosis

DIAGNOSTIC CHALLANGES

DRUG INDUCED DISORDERS VS COMORBID DISORDER

- Primary (a.k.a. independent) depression:
  - –Temporally independent, i.e. preceded drug abuse, or persisted in abstinence
  - –Ideally abstinence is current, directly observed
- •Substance-induced Disorder:
  - –Not temporally independent
  - –Exceeds what would be expected from usual toxic or withdrawal effects of substances
  - –***"Warrants clinical attention"***
- •Usual effects of substances
  - –See DSM-5 intoxication and withdrawal criteria

Substance/Medication-Induced Mental Disorders

- Induced
  - Depressive Disorder
  - Bipolar Disorder
  - Anxiety Disorder
  - Obsessive Compulsive disorder
  - Major or mild neurocognitive disorder (OBS)
    - Amnestic Confabulatory type

Substance/Medication-Induced Mental Disorders Cont……

- Induced
  - Hallucinogen-persisting perception disorder
  - Substance intoxication Delirium
  - Substance withdrawal Delirium
  - Substance induced sexual dysfunction
  - Substance induced sleep disorder

CRITERIA FOR ALL SUBSTANCE/MEDICATION-INDUCED MENTAL DISORDERS

- Clinically significant symptomatic presentation
- Evidence from history, examination, or laboratory finding that the disorder developed during or within 1 month of substance intoxication, withdrawal, or taking a medication.
- The involved substance/medication is capable of producing the mental disorder, and the disorder is not better explained by an independent mental disorder.

CRITERIA FOR ALL SUBSTANCE/MEDICATION-INDUCED MENTAL DISORDERS

- Evidence of an independent mental disorder could include:
  - Episodes of the **disorder preceding** the onset of severe intoxication or withdrawal or exposure to the medication.
  - The full mental disorder persisted for a substantial period of time (at least 1 month) **after the cessation** of acute withdrawal or severe intoxication or taking the medication.
  - This criterion does not apply to substance-induced neurocognitive disorders or hallucinogen persisting perception disorder, which persist beyond the cessation of acute intoxication or withdrawal.

CRITERIA FOR ALL SUBSTANCE/MEDICATION-INDUCED MENTAL DISORDERS

- The disorder did not occur exclusively during the course of a delirium, and it must cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

- DSM-5 notes that the diagnosis of a substance- induced mental disorder should only be made in addition to substance intoxication/withdrawal-induced symptoms if the mental symptoms are prominent and sufficiently severe to warrant clinical attention.

HOW TO APPROACH?

- Is there a prominent symptom?
- Is this symptom related to drug, alcohol, or medication use?
- Is this situation better explained by another DSM diagnosis?

HOW TO APPROACH?

- Did this situation occur exclusively during a delirium?
- Is the symptom in excess of the symptoms normally encountered during intoxication or withdrawal?
- Is the symptom excessively prominent considering the amount of substances used?

Differentiating between co-occurring and substance-induced disorders

- Careful history
- Confirmation of the history from collateral informants and medical records
- UDS
- Relationship between the use of psychoactive substances and the symptoms is a crucial step
- Mental symptoms during periods of sustained abstinence from all substances is critical.

KEY TREATMENT CONSIDERATIONS

- Depression:
  - Careful follow-up to rule out independent Depression.
- Anxiety Disorder
  - Rule out other organic causes (Thyroid, Medication)
- Psychosis
  - Medical workup to rule out organic disorders and to diagnose and treat medical disorders

TREATMENT : THINGS TO KNOW

- Treatment works (e.g. antidepressant medications, behavioral therapies)
- Manage Stress
- Treat substance use disorder right away
- Then initiate treatment for co-occurring psychiatric disorder, based on *careful diagnostic evaluation*
- The detection of causal influences is generally conducted in the context of attempting to treat both disorders.

SPECIFIC SUBSTANCES & ASSOCIATED SYMPTOMS

CAFFEINE

- The most commonly used stimulant
- The abuse of high caffeine content "energy drinks" is increasing.
- Symptoms of caffeine intoxication include anxiety, restlessness, insomnia, gastrointestinal upset, tremors, tachycardia, psychomotor agitation, and even death due to arrhythmias.
- It enhances dopaminergic actions indirectly (adenosine receptor)
- Caffeine withdrawal occurs frequently
  - characterized by headaches, fatigue, drowsiness, impaired concentration, and depressed mood, which occur 12 to 24 hours after cessation of consumption and reach a peak after 20 to 48 hours.

NICOTINE

- Deadliest psychoactive drug
- Prevalence of depression among smokers has been estimated at three times that of nonsmokers.
- Some smokers experience relapse of depressive episodes during quit attempts.

ALCOHOL

- Moderate to heavy consumption may be associated with depression, suicidal feelings, or violent behavior in some individuals.

- In those who are physiologically dependent,
  - **hyperadrenergic** state that is characterized by agitation, anxiety, tremor, malaise, hyperreflexia, mild tachycardia, increasing blood pressure, sweating, insomnia, nausea or vomiting, and perceptual distortions.

- After acute withdrawal from alcohol, some persons suffer from continued mood instability, with moderate lows, fatigability, insomnia, reduced sexual interest, and hostility.

- A few chronic heavy drinkers experience hallucinations, delusions, and anxiety during acute withdrawal, and some have grand mal seizures.

- Brain damage of several types is associated with alcohol-induced dementias and deliriums.

SEDATIVE-HYPNOTICS

- Can induce depression, anxiety
- Even withdrawal-induced psychosis with prolonged use and dependence
- Withdrawal symptoms include mood instability with anxiety or depression, sleep disturbance, autonomic hyperactivity, tremor, nausea or vomiting, transient hallucinations or illusions, and grand mal seizures.
- A protracted withdrawal syndrome has been reported to include anxiety, depression, **paresthesias**, perceptual distortions, muscle pain and twitching, tinnitus, dizziness, headache, derealization and depersonalization, and impaired concentration.
- These symptoms **can last for weeks**, and some (such as anxiety, depression, tinnitus, and paresthesias) have been reported for a year or more after withdrawal

STIMULANTS: COCAINE, AMPHETAMINE, AND METHAMPHETAMINE

- Intense euphoria or "rush," with hyperactive behavior and speech, hypersexuality, anorexia, insomnia, inattention, and labile moods.

- **Depressive symptoms and cognitive problems** as well as hypersomnia, decreased energy, and increased appetite commonly occur during a stimulant withdrawal phase.

- After a methamphetamine binge of several days, addicts will often be hostile and agitated, which is referred to as "**tweaking**"

- Individuals can become paranoid and delusional after prolonged heavy use of stimulants.

- Many stimulant addicts report a dysphoric state that is prominently marked by anhedonia and/or anxiety for months.

- Chronic and heavy methamphetamine users, particularly those who use intravenously, have an increased rate of psychosis and depression lasting several months or even years that closely resembles paranoid schizophrenia

- Stimulant addicts frequently report hallucinatory symptoms that are **visual ("coke snow") and tactile ("meth mites" or formication).**

OPIATE

- "High" or "rush" when the drug is used intravenously or smoked.
- Some sedation and manifests as a mellow, sleepy state (cf stimulants).
- If opiates are used for a long period, moderate to severe depression is common.
- Anxiety, depression, and sleep disturbance, in a milder form, can persist for weeks to months as a protracted withdrawal syndrome that gradually subsides.

CLASSICAL HALLUCINOGENS

- Lysergic acid diethylamide (LSD), mescaline, psilocybin, and dimethyltryptamine produce visual distortions and frank hallucinations.

- All hallucinogens are associated with **drug-induced panic reactions** that feature panic, paranoia, and even delusional states in addition to the hallucinations.

- A few hallucinogen users experience chronic reactions, involving
  - (a) prolonged psychotic reactions;
  - (b) depression, which can be life threatening;
  - (c) flashbacks; and
  - (d) exacerbations of preexisting psychiatric illnesses.

- The flashbacks are symptoms that occur after one or more psychedelic trips and consist of **flashes of light and afterimage prolongation in the periphery**.

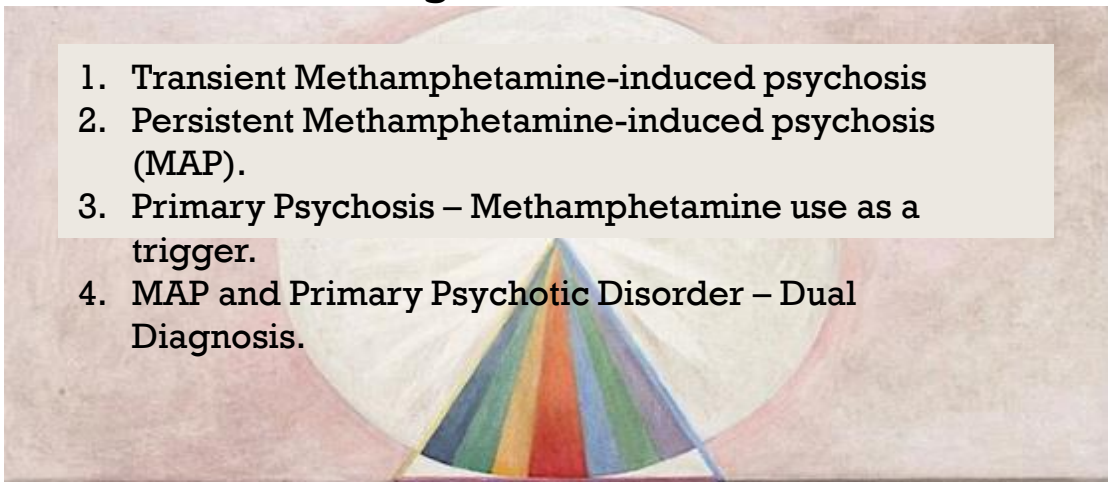
PHENCYCLIDINE (PCP) AND KETAMINE

- *N*-methyl-d-aspartate (NMDA) antagonists and dissociative drugs that cause hallucinations and dissociative states.
- PCP is known for its dissociative and delusional properties.
- It also is associated with violent behavior and amnesia of the intoxication.
- Over the last decade, PCP use has increased in combination with cannabis.

AMPHETAMINE INDUCED PSYCHOSIS

Methamphetamine-induced Psychosis & Primary Psychosis

Differential Diagnosis



What seems clear is that Methamphetamine abuse can result in the development of acute and, in some cases, chronic psychosis.

PSYCHOSIS AND ATS -

- Could be that psychosis occurs because of the sleep deprivation that follows amphetamine use

MAKING SENSE....

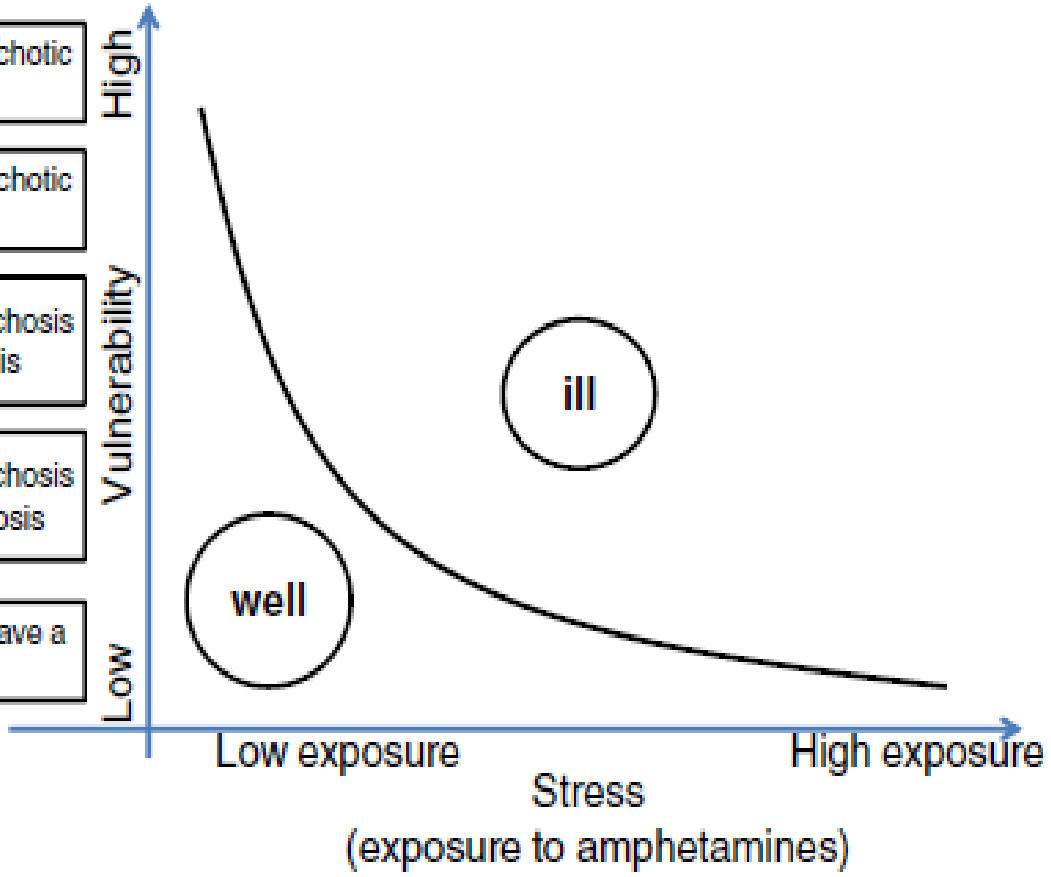
Schizophrenic patients becoming psychotic without use of amphetamines

Schizophrenic patients becoming psychotic with use of amphetamines

Users of amphetamines induced psychosis developing into a primary psychosis

Users of amphetamines induced psychosis not developing into a primary psychosis

Users of amphetamines who never have a drug induced psychosis



METHAMPHETAMINE-INDUCES PSYCHOSIS VS PRIMARY PSYCHOSIS

- **Differential Diagnosis:**

- Symptoms profile,
- age of first episode (later age on MAP),
- family history ?,
- characteristics of use (higher doses for prolonged periods of times vs sporadic use (although the reported doses required, duration of abuse, and duration of symptoms are highly variable);
- emergence of symptoms in periods of abstinence (reported in individuals with MAP under adverse circumstances).

Bramness GJ et al. Amphetamine-induced psychosis - a separate diagnostic entity or primary psychosis triggered in the vulnerable?.2012. BMC Psychiatry 12:221.

CANNABIS INDUCED DISORDER

Cannabis and Depression

- Increasing evidence of association between cannabis use and depression (dose related)
- Demonstrated -
  - In youth (Rey et al, 2002)
  - In young adults (Patton et al, 2002)
  - Longitudinal cohort studies (Fergusson et al, 1997, Angst 1996)
- Insufficient evidence to establish a causal link

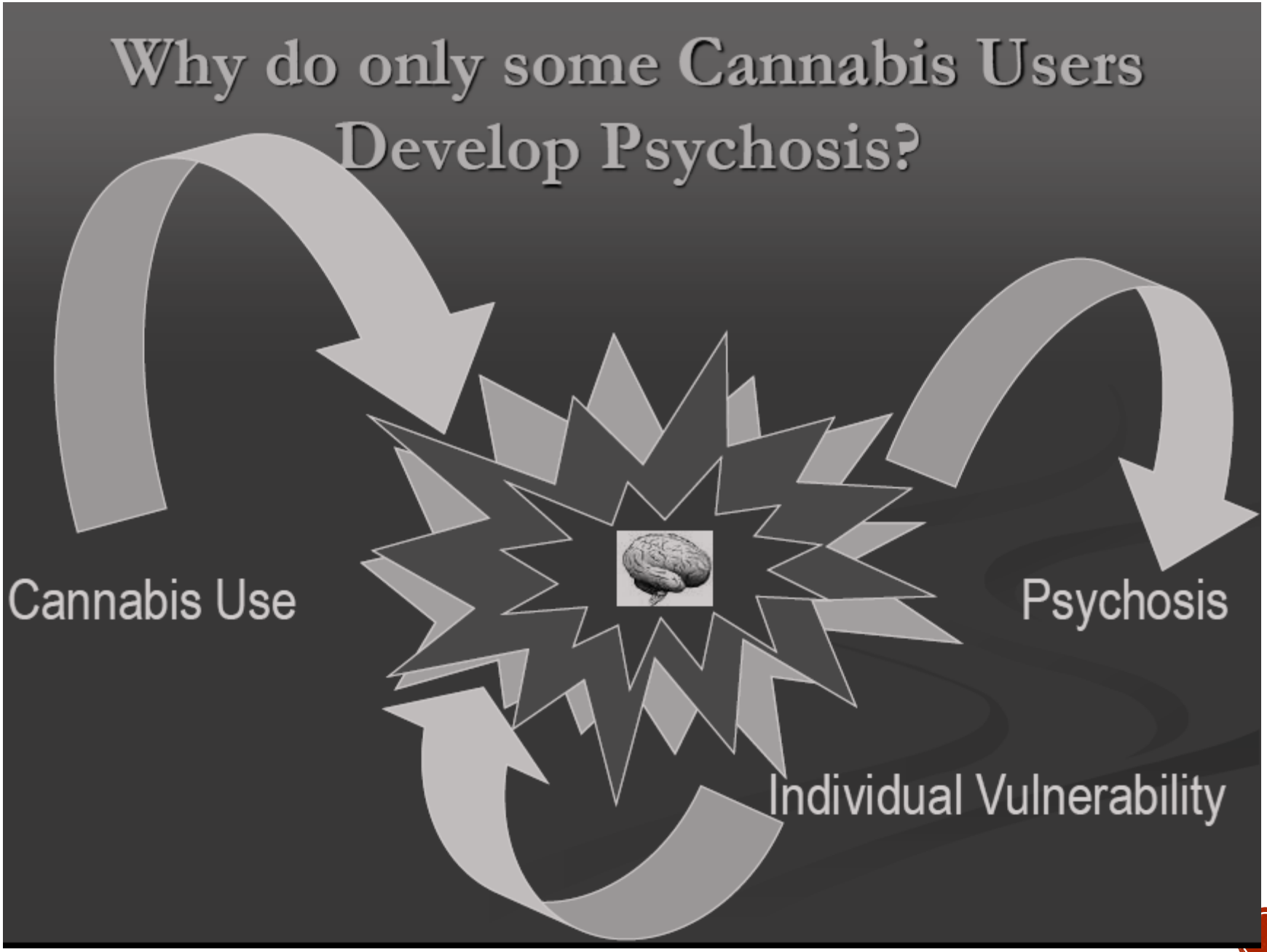
CANNABIS AND PSYCHOSIS

CANNABIS CAUSES PSYCHOSIS??

- It has long been recognized that the use of cannabis in early adolescence increases the risk of later development of psychosis and schizophrenia.

- Because the drug intake takes place many years before the diagnosis of schizophrenia it has been argued that this cannot be a case of reversed causality .

Why do only some Cannabis Users Develop Psychosis?



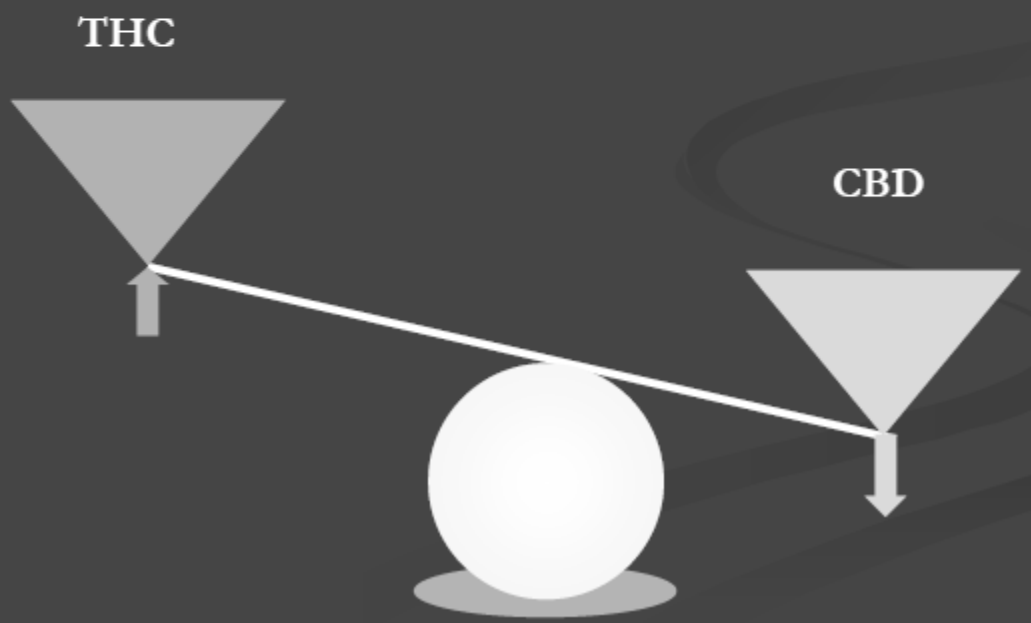
D9THC:CBD ratio

D9THC

- Partial agonist at CB1
- Increases psychotic symptoms
- Increases impairment of attention, memory and learning

Cannabidiol (CBD)

- Inverse agonist at CB1
- Is not hallucinogenic
- Has anxiety relieving properties
- Antagonises effects of THC



CANNABIS AND PSYCHOSIS

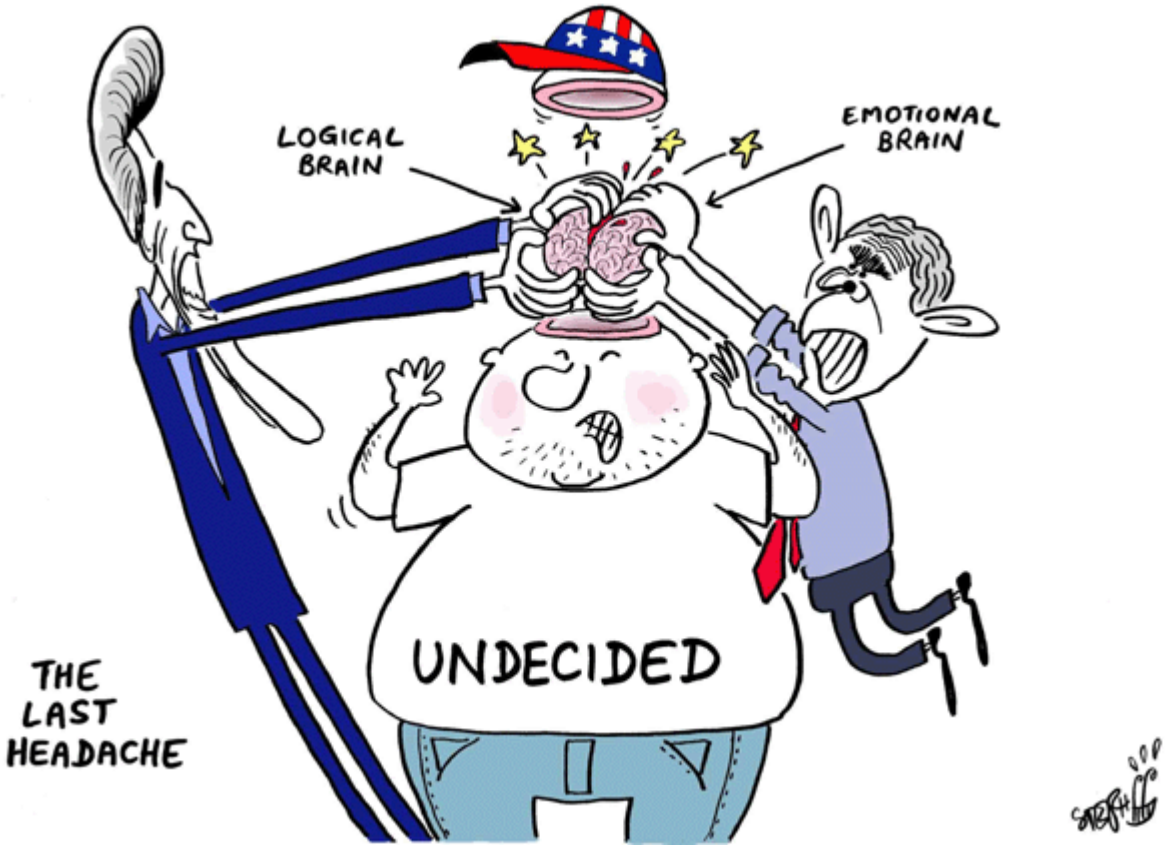
- THC/CBD ratio
  - Short lived acute paranoid state (? Warning sign)
  - Bring on F20 earlier (3yrs)
  - Worsen existing psychotic symptoms
- ~~Self medication ??~~
- Doubles the odd of developing Schizophrenia in vulnerable individual (40 %)
- Dose response relation
- Not necessary nor sufficient
- CVS risks the same as smoking.
- Earlier the use more the risk
  - IQ, EF, Personality

- And this warrants serious consideration from the point of view of public health policy??

SUMMARY

- Substance use disorder and Mental health symptoms often co-occur.
- Can present a clinical dilemma in determining the proper level of care.
- Most patients with comorbid substance use and mental disorders present to primary health care setting and can be managed outside of psychiatric or detox inpatient treatment.
- Although abstinence is a critical factor in assessment and treatment of comorbid substance use and mental disorder, it is not always be possible.
- Careful history and collateral information can go a long way in helping the direction and outcome of treatment

THANKS!!!!


LOGICAL BRAIN
EMOTIONAL BRAIN
UNDECIDED
THE LAST HEADACHE

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