# Substance Induced Disorders

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# Objectives

At the end of this lecture, participants should be able to:

- Understand the difference between substance induced disorders and independent psychiatric disorders
- Be able to diagnose substance induced disorder versus independent mood, anxiety, or psychotic disorder
- Discuss typical treatment for independent psychiatric disorders
- Understand the importance of differentiating between substance-induced and independent psychiatric disorders

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# List of Substances in DSM

- Alcohol
- Caffeine
- Cannabis
- Hallucinogens (ecstasy, LSD, PCP, mescaline, etc)
- Inhalants
- Opioids
- Sedatives, hypnotics, and anxiolytics
- Stimulants (amphetamines, cocaine, and other stimulants)
- Tobacco
- Other (or unknown) substances

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# DIAGNOSES ASSOCIATED WITH CLASS OF SUBSTANCE

| Substance | Anxiety | Depress | Bipolar | Psychotic | OC | Neurocognitive | Sleep | Delirium | Sexual |
|---|---|---|---|---|---|---|---|---|---|
| alcohol | I/W | I/W | I/W | I/W | | I/W/P | I/W | I/W | I/W |
| cannabis | I | | | I | | | I/W | I | |
| hallucinogen | I | I | I | I | | | | I | |
| inhalant | I | I | | I | | I/P | | I | |
| opioid | W | I/W | | | | | I/W | I/W | I/W |
| sedative | W | I/W | I/W | I/W | | I/W/P | I/W | I/W | I/W |
| stimulant | I/W | I/W | I/W | W | I/W | | I/W | I | I |
| caffeine | I | | | | | | I/W | | |
| tobacco | | | | | | | W | | |

Onset during I = intoxication; W = withdrawal
P = persisting

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# DIAGNOSES ASSOCIATED WITH CLASS OF SUBSTANCE

| Substance | SUD | Intoxication | Withdrawal |
|---|---|---|---|
| alcohol | X | X | X |
| cannabis | X | X | X |
| hallucinogen | X | X | |
| inhalant | X | X | |
| opioid | X | X | X |
| sedative | X | X | X |
| stimulant | X | X | X |
| caffeine | | X | X |
| tobacco | X | | X |

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# Diagnosis

- Difficult to diagnose psychiatric disorders when someone actively using substance
- Symptoms of intoxication and withdrawal may resemble symptoms of mood and anxiety disorders
  - Overlap in symptoms
  - Overlap in consequences (i.e., suicide attempt)
- DSM-IV made distinction with substance induced and independent psychiatric disorders
  - To diagnose mood or anxiety disorder, the full syndrome is established prior to substance use
  - The mood or anxiety symptoms persist for more than 4 weeks after cessation of substance use
- DSM-5 has similar distinction

# DSM-5 Substance Induced Disorder

- The disorder represents clinically significant symptomatic presentation of a relevant mental disorder
- There is evidence from H&P or labs of both
  - The disorder developed during or within 1 month of substances intoxication or withdrawal or taking a medication
  - The involved substance/medication is capable of producing the mental disorder
- The disorder is not better explained by an independent mental disorder
  - The disorder preceded the onset of intoxication or withdrawal or exposure to the medication
  - The full mental disorder persisted for at least 1 month after cessation of acute withdrawal or intoxication or taking the medication
- The disorder doesn't occur exclusively in course of delirium
- Disorder causes significant distress or impairment in function

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# Symptoms of Substance Induced Disorders May Be Identical to Independent Disorders

- Important to differentiate because they have different prognoses
- Intoxication and withdrawal induced disorders resolve without psychotropic medications
  - Occasionally psychotropic medications may be needed for agitation
- Independent disorders may require psychotropic medications
- Error in diagnosis may lead to medical mismanagement

# Substance Induced and Independent Disorders May Complicate Recovery

- Longitudinal study of 250 patients with alcohol, cocaine, heroin use disorders, followed for up to 18 months
- Substance induced depression significantly predicted post-discharge use of:
  - Alcohol (HR = 4.7)
  - Cocaine (HR = 5.3)
  - Heroin (HR = 6.5)
- Of those achieving remission, independent major depression predicted relapse to alcohol (HR =2.3) and cocaine (HR=2.7)

Samet et al., 2013

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# SUBSTANCE INDUCED DEPRESSIVE DISORDERS

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# Major Depressive Disorder

A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.
   - Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad, empty, hopeless) or observation made by others (e.g., appears tearful). (**Note:** In children and adolescents, can be irritable mood.)
   - Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day.
   - Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. (**Note:** In children, consider failure to make expected weight gain.)
   - Insomnia or hypersomnia nearly every day.
   - Psychomotor agitation or retardation nearly every day (observable by others).
   - Fatigue or loss of energy nearly every day.
   - Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day.
   - Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others).
   - Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

B. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

C. The episode is not attributable to the physiological effects of a substance or another medical condition.

D. Do not include symptoms that are clearly attributable to another medical condition.

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# Depressive Disorders

- Typical medication treatment includes
  - SSRIs
  - SNRIs
  - Buproprion
  - Mirtazapine
  - TCAs
- Cognitive behavior therapy
- Interpersonal therapy

# Substance Induced Depressive Disorder

A. A prominent and persistent disturbance in mood characterized by depressed mood or markedly diminished interest or pleasure in all, or almost all, activities.
B. Evidence from the H&P or laboratory findings of both (1) and (2):
    1. The symptoms in Criterion A developed during or soon after substance intoxication or withdrawal.
    2. The involved substance can produce the symptoms in Criterion A.
C. The disturbance is not better explained by a depressive disorder that is not substance induced. Evidence of an independent depressive disorder may include:
    1. The symptoms preceded the onset of the substance use; the symptoms persist for a substantial period of time (e.g., about 1 month) after the cessation of acute withdrawal or severe intoxication; or there is evidence of an independent depressive disorder (e.g., a history of recurrent non-substance related episodes).
D. The disturbance does not occur exclusively during delirium.
E. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

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# DIAGNOSES ASSOCIATED WITH CLASS OF SUBSTANCE

| Substance | Anxiety | Depress | Bipolar | Psychotic | OC | Neurocognitive | Sleep | Delirium | Sexual |
|---|---|---|---|---|---|---|---|---|---|
| alcohol | I/W | I/W | I/W | I/W | | I/W/P | I/W | I/W | I/W |
| cannabis | I | | | I | | | I/W | I | |
| hallucinogen | I | I | I | I | | | | I | |
| inhalant | I | I | | I | | I/P | | I | |
| opioid | W | I/W | | | | | I/W | I/W | I/W |
| sedative | W | I/W | I/W | I/W | | I/W/P | I/W | I/W | I/W |
| stimulant | I/W | I/W | I/W | W | I/W | | I/W | I | I |
| caffeine | I | | | | | | I/W | | |
| tobacco | | | | | | | W | | |

Onset during I = intoxication; W = withdrawal
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# Diagnosing Substance Induced Depressive Disorder

- Need evidence from H&P or labs indicating substance use, intox, or withdrawal
- Substance induced depressive disorders start within days to weeks after substance use or withdrawal
- Symptoms may last for days after use of substance, and can persist for weeks depending on half-life of substance and possibility of protracted withdrawal
- Primary depressive disorders may precede onset of substance intox or withdrawal and may occur during periods of abstinence
- Depressive symptoms may continue while the substance use continues

# Prevalence

- Lifetime prevalence of substance/medication-induced depressive disorder is 0.26% (Blanco et al. 2012)
- NESARC 12-month prevalence of independent mood disorders were 9.21% in the total sample, while prevalence of substance-induced mood disorders was less than 1% (Grant et al., 2004)

- Langas et al. (2013) looked at patients with SUD and found
  - 42 had both SUD and MDD
  - 20 (47.6%) had lifetime history of independent MDD
  - 10 (23.8%) had history of substance induced depressive disorder (SIDD) only
  - 12 (28.6%) had history of independent MDD and SIDD
- Compared to independent MDD, those with substance-induced depressive disorder only
  - Had fewer years education
  - Smoked more cigarettes per day
  - Had shorter duration of depressive episodes

# Diagnosing Substance-Induced Depression

- Substance-induced depressions may appear identical to major depressive episodes (Schuckit & Smith, 1996)
  - However, individuals with substance-induced depressions did not have
    - an increased family history of major depressive disorder
    - major depressive episodes are not observed at high rates in their children

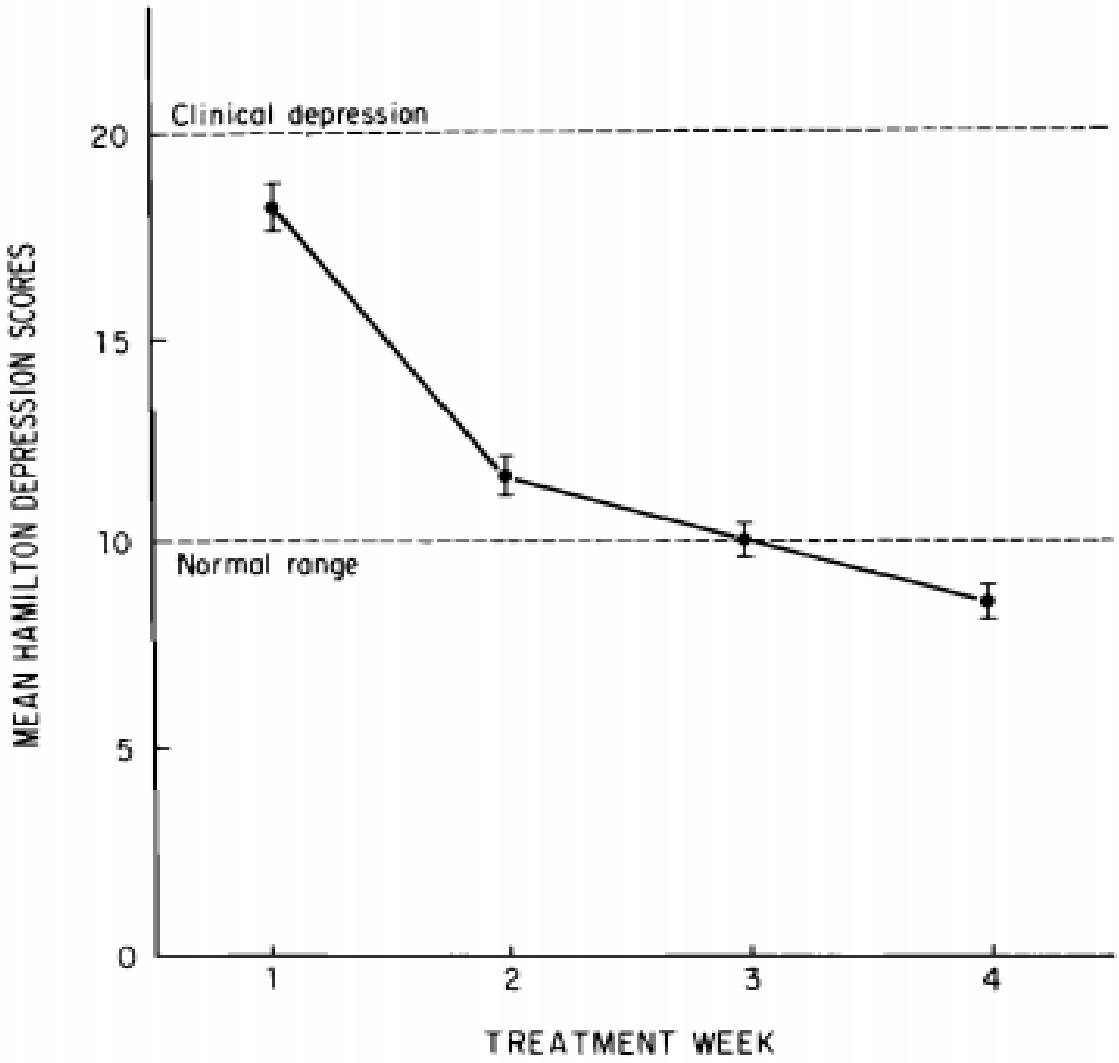
- In patients with SUD, both primary and substance-induced MDD predict future depression (Nunes et al., 2006)

# Alcohol & Depression

- Entry to study:  HRSD scores ranged 2-42
- Scores decreased significantly each week with the greatest mean difference between Week 1 and Week 2.
- Authors concluded for patients with AUD, treatment of depression should be deferred for at least 4 weeks after stopping alcohol use since depressive symptoms are likely to improve with time

Brown & Schuckit, 1988

FIGURE 1. Hamilton depression scores of male primary alcoholics during four weeks of hospitalization.

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# Course Modifiers

- Blanco et al. (2012) found those with substance-induced depressive disorder are more likely:
  - Male
  - African-American
  - Have at most a high school diploma
  - Lack insurance
  - Have lower family income
  - Have higher family history of substance use disorders and antisocial behavior
  - Have greater 12-month history of stressful life events
  - Greater number of DSM-IV major depressive disorder criteria
  - Report feelings of worthlessness, insomnia/hypersomnia, and thoughts of death and suicide attempts
- And less likely to report depressed mood

# Comorbidity

- Comparing individuals with MDD and a comorbid substance use disorder, individuals with substance induced depressive disorder are more likely to have (Blanco et al., 2012):
  - alcohol use disorder
  - any other substance use disorder
  - histrionic personality disorder
- And are less likely to have persistent depressive disorder

# SUBSTANCE INDUCED BIPOLAR DISORDERS

# Bipolar I Disorder – Manic Episode

A. A distinct period of abnormally and persistently elevated, expansive, or irritable mood and abnormally and persistently increased activity or energy, lasting at least 1 week and present most of the day, nearly every day (or any duration if hospitalization is necessary).

B. During the period of mood disturbance and increased energy or activity, 3 (or more) of the following symptoms (4 if the mood is only irritable) are present to a significant degree and represent a noticeable change from usual behavior:
   - Inflated self-esteem or grandiosity.
   - Decreased need for sleep (e.g., feels rested after only 3 hours of sleep).
   - More talkative than usual or pressure to keep talking.
   - Flight of ideas or subjective experience that thoughts are racing.
   - Distractibility (i.e., attention too easily drawn to unimportant or irrelevant external stimuli).
   - Increase in goal-directed activity (either socially, at work or school, or sexually) or psychomotor agitation (i.e., purposeless non-goal-directed activity).
   - Excessive involvement in activities that have a high potential for painful consequences (e.g., engaging in unrestrained buying sprees, sexual indiscretions, or foolish business investments).

C. The mood disturbance is sufficiently severe to cause marked impairment in social or occupational functioning or to necessitate hospitalization to prevent harm to self or others, or there are psychotic features.

D. The episode is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication, other treatment) or another medical condition.

**Note:** Criteria A–D constitute a manic episode. At least one lifetime manic episode is required for the diagnosis of bipolar I disorder.

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# Bipolar II Disorder - Hypomania

A. A distinct period of abnormally and persistently elevated, expansive, or irritable mood and abnormally and persistently increased activity or energy, lasting at least 4 consecutive days and present most of the day, nearly every day.

B. During the period of mood disturbance and increased energy and activity, 3 (or more) of the following symptoms (4 if the mood is only irritable) have persisted, represent a noticeable change from usual behavior, and have been present to a significant degree:
   - Inflated self-esteem or grandiosity.
   - Decreased need for sleep (e.g., feels rested after only 3 hours of sleep).
   - More talkative than usual or pressure to keep talking.
   - Flight of ideas or subjective experience that thoughts are racing.
   - Distractibility (i.e., attention too easily drawn to unimportant or irrelevant external stimuli), as reported or observed.
   - Increase in goal-directed activity (either socially, at work or school, or sexually) or psychomotor agitation.
   - Excessive involvement in activities that have a high potential for painful consequences (e.g., unrestrained buying sprees, sexual indiscretions, or foolish business investments).

C. The episode is associated with an unequivocal change in functioning that is uncharacteristic of the individual when not symptomatic.

D. The disturbance in mood and the change in functioning are observable by others.

E. The episode is not severe enough to cause marked impairment in social or occupational functioning or to necessitate hospitalization. If there are psychotic features, the episode is, by definition, manic.

F. The episode is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication, other treatment) or another medical condition .

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# Treatment of Bipolar Disorders

- Typical medications include
  - Lithium
  - Divalproex sodium; lamotrigine; carbamazepine
  - Second generation antipsychotics
  - Antidepressants (SSRIs, SNRIs)
  - First generation antipsychotics

- Cognitive behavior therapy
- Interpersonal and social rhythm therapy

# Substance Induced Bipolar Disorder Diagnosis

A. A prominent and persistent disturbance in mood that is characterized by elevated, expansive, or irritable mood, with or without depressed mood, or markedly diminished interest or pleasure in all, or almost all, activities

B. There is evidence from the history, physical examination, or laboratory findings of both (1) and (2):
   1. The symptoms in Criterion A developed during or soon after substance intoxication or withdrawal
   2. The involved substance may produce the symptoms in Criterion A

C. The disturbance is not better explained by a bipolar or related disorder that is not substance induced. Such evidence of an independent bipolar or related disorder could include the following:
   1. The symptoms precede the onset of the substance use; the symptoms persist for a substantial period of time (e.g., about 1 month) after the cessation of acute withdrawal or severe intoxication; or there is evidence suggesting the existence of an independent non-substance induced bipolar disorder

D. The disturbance does not occur exclusively during delirium

E. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning

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# DIAGNOSES ASSOCIATED WITH CLASS OF SUBSTANCE

| Substance | Anxiety | Depress | Bipolar | Psychotic | OC | Neurocognitive | Sleep | Delirium | Sexual |
|---|---|---|---|---|---|---|---|---|---|
| alcohol | I/W | I/W | I/W | I/W | | I/W/P | I/W | I/W | I/W |
| cannabis | I | | | I | | | I/W | I | |
| hallucinogen | I | I | I | I | | | | I | |
| inhalant | I | I | | I | | I/P | | I | |
| opioid | W | I/W | | | | | I/W | I/W | I/W |
| sedative | W | I/W | I/W | I/W | | I/W/P | I/W | I/W | I/W |
| stimulant | I/W | I/W | I/W | W | I/W | | I/W | I | I |
| caffeine | I | | | | | | I/W | | |
| tobacco | | | | | | | W | | |

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# Prevalence

- No known epidemiological data of substance-induced mania or bipolar disorder
- Persons with alcohol use disorder have about a 3% risk for bipolar disorder, compared to a 1% risk in the general population (Helzer & Pryzbeck, 1988)

# Diagnosing Substance Induced Bipolar Disorder

- Need evidence from H&P or labs indicating substance use, intox, or withdrawal
- Substance induced bipolar disorders start within days to weeks after substance use or withdrawal
- Symptoms may last for days after use of substance, and can persist for weeks depending on half-life of substance and possibility of protracted withdrawal
- Primary bipolar disorders may precede onset of substance intox or withdrawal and may occur during periods of abstinence
- Manic or hypomanic symptoms may continue while the substance use continues

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# Development & Course

- Course will be different with different substances, for example:
- PCP-induced mania (Rosen 1979; Slavney et al. 1977)
  - Initial presentation may be delirium, then becomes manic or mixed state
  - Typically happens within hours to days
- Stimulant-induced mania or hypomania
  - Onset within mins-hours after ingesting, smoking, or injecting
  - Brief episodes, resolves in 1-2 days

# Case Reports of Substance Induced Mania

- Ibogaine (Cole et al., 2015)
- Methylphenidate (Lahti et al., 2009)
- Alprazolam (France et al., 1984; Remick 1985; Mayerhoff et al., 1986)
- High dose caffeine (840 mg; Krankl & Gitlin, 2015)
- Lorazepam withdrawal (Turkington & Gill, 1989; Rigby et al., 1989; Lapierre & Labelle, 1989)
- Opioid withdrawal (Khalili & Gudarzi, 2012)

# Substance Use and Antidepressants in Bipolar Disorder

- 53 patients diagnosed with DSM-IV bipolar disorder had retrospective interviews to identify:
  - Lifetime affective episodes
  - Pharmacotherapy trials
  - Information from interviews was corroborated with treating clinicians and reviews of medical, psychiatric, and pharmacy records
- Antidepressant-induced mania or hypomania was evident in 39.6% (21/53) of the study group
- 17 patients had SUD; 14 (82.4%) used alcohol +/- cannabis; 3 (17.6%) used cocaine
- History of substance use disorder was associated with substantially increased risk for antidepressant-induced mania (odds ratio = 6.99, 95% CI = 1.57 to 32.28, p = .007).
- Substance use preceded antidepressant-induced mania by >1 year in almost all cases

Goldberg & Whiteside, 2002

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# SUBSTANCE INDUCED PSYCHOTIC DISORDERS

# Schizophrenia

A. Two (or more) of the following, each present for a significant portion of time during a 1-month period (or less if successfully treated). At least one of these must be (1), (2), or (3):
   - Delusions.
   - Hallucinations.
   - Disorganized speech (e.g., frequent derailment or incoherence).
   - Grossly disorganized or catatonic behavior.
   - Negative symptoms (i.e., diminished emotional expression or avolition).

B. Decrease in functioning in at least one area since symptoms started.

C. Continuous signs of the disturbance persist for at least 6 months.

D-F. Have ruled out this is not schizoaffective disorder, bipolar disorder, substance use, autism.

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# Typical Treatments

- Antipsychotic medications
  - First generation (Typical)
  - Second generation (Atypical)
  - Clozapine

- Cognitive behavior therapy
- Cognitive enhancement therapy
- Social skills training or psych rehab

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# Substance Induced Psychotic Disorder (SIPD)

A. Presence of one or both of the following symptoms:
   1. Delusions
   2. Hallucinations

B. Evidence from the H&P or laboratory findings of both (1) and (2):
   1. The symptoms in Criterion A developed during or soon after substance intoxication or withdrawal or after exposure to a medication.
   2. The involved substance can produce the symptoms in Criterion A.

C. The disturbance is not better explained by a psychotic disorder that is not substance induced. Evidence of an independent psychotic disorder could include the following:
   1. The symptoms preceded the onset of the substance use; the symptoms persist for a substantial period of time (e.g., about 1 month) after the cessation of acute withdrawal or severe intoxication; or there is other evidence of an independent non-substance induced psychotic disorder (e.g., a history of recurrent non-substance related episodes).

D. The disturbance does not occur exclusively during the course of a delirium.

E. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

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| cannabis | I | | | I | | | I/W | I | |
| hallucinogen | I | I | I | I | | | | I | |
| inhalant | I | I | | I | | I/P | | I | |
| opioid | W | I/W | | | | | I/W | I/W | I/W |
| sedative | W | I/W | I/W | I/W | | I/W/P | I/W | I/W | I/W |
| stimulant | I/W | I/W | I/W | W | I/W | | I/W | I | I |
| caffeine | I | | | | | | I/W | | |
| tobacco | | | | | | | W | | |

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# Diagnosing Substance Induced Psychotic Disorder

- Need evidence from H&P or labs indicating substance use, intox, or withdrawal
- Substance induced psychotic disorders start soon after substance intox or withdrawal and can persist for weeks
- Primary psychotic disorders may precede onset of substance intox or withdrawal and may occur during periods of abstinence
- Psychotic symptoms may continue while the substance use continues.
- Atypical presentation may suggest substance induced (e.g., late age of onset, atypical course)

# Diagnosing Substance Induced Psychotic Disorder

- History of primary psychotic disorder does not rule out the possibility of a substance induced psychotic disorder
- Consider primary psychotic disorder if there is persistence of psychotic symptoms for a substantial period after the end of substance intoxication or withdrawal (i.e., >1 month)
- Consider other causes of psychotic symptoms in someone with substance intoxication or withdrawal, as substance use is not uncommon in those with psychotic disorders

# Diagnosing Substance Induced Psychotic Disorder

- Those intoxicated or withdrawing from a substance may experience perceptual disturbances
  - They may recognize them as drug effects and have intact reality testing regarding these perceptual experiences
  - This is not a substance induced psychotic disorder
- Instead, is substance intoxication or withdrawal with perceptual disturbance

- If they have perceptual disturbances in course of withdrawal delirium, these are part of delirium diagnosis

# Prevalence

- In general population, prevalence is unknown
- In those presenting with first episode psychosis in different treatment settings, prevalence is 7-25% (Crebbin et al., 2009)

- In 198 methamphetamine users presenting to a syringe exchange program in Australia (Hides et al., 2015)
  - 101 (51%) participants had a lifetime psychotic disorder
  - 81 (80%) were determined to be substance induced
  - 20 (20%) were determined to be primary psychotic disorders
  - 62 (39%) had current psychoric disorder, of these 49 (79%) were substance induced
- Younger age of regular methamphetamine use had increased risk of lifetime substance induced psychosis

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# Study of Psychosis and SIPD

386 patients presenting to the ED with psychosis and substance use were interviewed using PRISM; 93.3% of subjects started regularly using substances before 1st psychotic symptom; 44% of cases of psychosis were determined to be substance induced

| Type of Substance Induced Psychosis | n | % |
|---|---|---|
| Cannabis | 32 | 18.9% |
| Alcohol | 29 | 17.2% |
| Cocaine | 26 | 15.4% |
| Hallucinogen | 7 | 4.1% |
| Sedative | 4 | 2.4% |
| Heroin | 2 | 1.2% |
| Stimulant | 1 | 0.6% |
| 2/+ substances | 67 | 39.6% |

Caton et al., 2005

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# Study of Psychosis and SIPD

217 (56%) received a diagnosis of primary psychotic disorder

| Substances used by those with primary psychotic disorder | n | % |
|---|---|---|
| Cannabis | 120 | 55.3% |
| Alcohol (>5 drinks at once) | 109 | 50.2% |
| Daily or near daily use for 1 month | 50 | 23% |
| Cocaine | 35 | 16.1% |
| Hallucinogens | 11 | 5.1% |

Caton et al., 2005

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**Table 2. Clinical Characteristics of Substance-Induced and Primary Psychotic Disorder Groups**

| Finding | Baseline Findings by Diagnosis Category, Mean (SD) | | *P* Value |
|---|---|---|---|
| | Primary Disorder (n = 217) | Substance-Induced Disorder (n = 169) | |
| PAS score | 0.32 (0.14) | 0.31 (0.14) | .34 |
| PANSS | | | |
| Positive subscale score | 18.62 (7.26) | 14.30 (5.36) | <.001 |
| Negative subscale score | 14.16 (6.24) | 11.67 (4.74) | <.001 |
| General psychopathology score | 33.29 (10.46) | 28.44 (6.86) | <.001 |
| SUMD | | | |
| Unawareness of symptoms | 2.79 (1.52) | 1.98 (1.74) | <.001 |
| Misattributions for symptoms | 2.99 (1.77) | 2.36 (2.00) | <.001 |
| Age of onset of drug use, y | 17.17 (4.14) | 16.83 (5.19) | .47 |

Abbreviations: PANSS, Positive and Negative Syndrome Scale; PAS, Premorbid Adjustment Scale; SUMD, Scale to Assess Unawareness of Mental Disorders.

Caton et al., 2005

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**Table 4. Axis II, PTSD, and Substance Use Disorder Comorbidity**

| Comorbidity | Subject Group, % | | OR (95% CI) |
|---|---|---|---|
| | Primary Disorder (n = 217) | Substance-Induced Disorder (n = 169) | |
| Axis II disorders | | | |
| Borderline personality disorder | 8.8 | 14.2 | 1.7 (0.9-3.3) |
| Antisocial personality disorder | 8.3 | 17.2 | 2.3 (1.2-4.3) |
| PTSD | 6.5 | 11.8 | 1.9 (0.9-4.0) |
| Substance use disorders | | | |
| Alcohol abuse/dependence | 34.1 | 60.4 | 2.9 (1.9-4.5) |
| Marijuana abuse/dependence | 37.3 | 42.0 | 1.2 (0.8-1.8) |
| Cocaine abuse/dependence | 9.2 | 40.8 | 6.8 (3.9-11.8) |
| Heroin abuse/dependence | 0.9 | 10.7 | 12.8 (2.9-56.0) |
| Hallucinogen abuse/dependence | 0.9 | 5.9 | 6.8 (1.5-31.3) |
| Polydrug dependence* | 5.1 | 18.3 | 4.2 (2.0-8.7) |
| Any drug dependence (including alcohol) | 44.7 | 84.6 | 6.8 (4.1-11.2) |

Abbreviation: CI, confidence interval; OR, odds ratio; PTSD, posttraumatic stress disorder.
*Includes subjects with 3 or more drug dependence diagnoses

Caton et al., 2005

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# Follow-up of Psychosis and SIPD

- 6 & 12 months later, 319 subjects out of original 386 were reinterviewed and PRISM done again
- At follow-up,
  - 285 subjects (89%) retained their baseline diagnostic category
  - 10 (3%) subjects with a baseline diagnosis of primary psychotic disorder remitted during the follow-up interval and experienced a new substance-induced psychotic episode
  - 34 subjects (11%) changed from substance induced psychosis to primary psychosis
  - 25 (74%) diagnosis changed in the first 6 months due to persistent psychotic symptoms in the absence of substance use

Caton et al., 2007

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# Follow-up of Psychosis and SIPD

- Comorbidity with SUD
  - Primary psychotic group 33%
  - Substance induced psychotic group  61%
  - Change group (SIPD to PPD)  71%

Caton et al., 2007

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# FOLLOW-UP OF PSYCHOSIS AND SIPD

**Table 3** Clinical characteristics of the three diagnostic groups

| | Primary psychosis group ($n$=186) Mean (s.d.) | Substance-induced psychosis group ($n$=99) Mean (s.d.) | Change group ($n$=34) Mean (s.d.) | Statistical test[1] | | | |
|---|---|---|---|---|---|---|---|
| | | | | Primary *v.* change | | Substance-induced *v.* change | |
| | | | | Unadjusted $\chi^2$ | Adjusted[2] $\chi^2$ | Unadjusted $\chi^2$ | Adjusted[2] $\chi^2$ |
| Premorbid adjustment scale score | 0.32 (0.14) | 0.31 (0.12) | 0.37 (0.15) | 3.43 | 3.69 | 6.21* | 5.34* |
| PANSS | 66.72 (21.25) | 54.65 (15.45) | 57.71 (12.75) | 6.35* | 5.90* | 1.07 | 0.50 |
| Unawareness score | 2.80 (1.57) | 1.75 (1.70) | 2.59 (1.70) | 0.50 | 0.20 | 5.99* | 5.31* |
| Misattribution score | 2.97 (1.81) | 2.21 (2.05) | 2.75 (1.92) | 0.45 (1) | 0.44 | 1.81 | 1.41 |

PANSS, Positive and Negative Syndrome Scale
1. Likelihood ratio chi-squared test, d.f.=1.
2. Adjusted for age, gender, race, marital status and education level.
*$P < 0.05$.

Caton et al., 2007

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# Follow-up of Psychosis and SIPD

- At 24 months later, 239 subjects out of original 386 were reinterviewed and PRISM done again
- No diagnostic changes occurred between 12 and 24 months
- Studied psychiatric symptoms, adjustment, and utilization of services at this interview

Drake et al., 2011

# Follow-up of Psychosis and SIPD

- Patients with primary psychosis were more likely to use
  - antipsychotic and mood stabilizing medications, hospitals, outpatient psychiatrists
- Those with substance induced psychosis were more likely to use
  - outpatient substance abuse treatments and medications for addictions
- Use of antipsychotic medications decreased over time
- Use of outpatient dual disorders programs, outpatient psychiatrist visits, and other outpatient physician visits increased over time

Drake et al., 2011

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# Follow-up of Psychosis and SIPD

- Patients with primary psychosis increased participation in outpatient mental health treatments over time
- Patients with substance-induced psychosis decreased outpatient mental health treatments over time

- Seeing an outpatient psychiatrist was correlated with
  - using an antidepressant medication
  - using an antipsychotic medication
  - using outpatient mental health treatment

Drake et al., 2011

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# Follow-up of Psychosis and SIPD

| Receipt of adequate care at each time point | | |
|---|---|---|
| | Primary Psychosis | SIPD |
| 6 months | 19% | 8% |
| 12 months | 21% | 9% |
| 18 months | 25% | 12% |
| 24 months | 26% | 9% |

Adequate care for primary psychotic disorders: taking a medication, participating in outpatient mental health treatment, and visiting a psychiatrist or other doctor

Adequate care for SIPD: participating in some form of substance abuse treatment and seeing a doctor for monitoring

Drake et al., 2011

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# SUBSTANCE INDUCED ANXIETY DISORDERS

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# Panic Disorder

A. Recurrent unexpected panic attacks. A panic attack is an abrupt surge of intense fear or intense discomfort that reaches a peak within minutes, and during which time 4 (or more) of the following symptoms occur:
   - Palpitations, pounding heart, or accelerated heart rate.
   - Sweating.
   - Trembling or shaking.
   - Sensations of shortness of breath or smothering.
   - Feelings of choking.
   - Chest pain or discomfort.
   - Nausea or abdominal distress.
   - Feeling dizzy, unsteady, light-headed, or faint.
   - Chills or heat sensations.
   - Paresthesias (numbness or tingling sensations).
   - Derealization (feelings of unreality) or depersonalization (being detached from oneself).
   - Fear of losing control or "going crazy."
   - Fear of dying.

B. At least one of the attacks has been followed by 1 month (or more) of 1 or both of the following:
   - Persistent concern or worry about additional panic attacks or their consequences (e.g., losing control, having a heart attack, "going crazy").
   - A significant maladaptive change in behavior related to the attacks (e.g., behaviors designed to avoid having panic attacks, such as avoidance of exercise or unfamiliar situations).

DSM-5, 2013

# Generalized Anxiety Disorder

A. Excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance).

B. The individual finds it difficult to control the worry.

C. The anxiety and worry are associated with 3 (or more) of the following 6 symptoms (with at least some symptoms having been present for more days than not for the past 6 months; only 1 item for children):

- Restlessness or feeling keyed up or on edge.
- Being easily fatigued.
- Difficulty concentrating or mind going blank.
- Irritability.
- Muscle tension.
- Sleep disturbance (difficulty falling or staying asleep, or restless, unsatisfying sleep).

DSM-5, 2013

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# Anxiety Disorders

- Typical medication treatment includes
  - SSRIs
  - SNRIs
  - TCAs
- Cognitive behavior therapy

# Substance Induced Anxiety Disorder Diagnosis

A. Panic attacks or anxiety are predominant in the clinical picture
B. There is evidence from H&P or laboratory findings of both (1) and (2):
    1. The symptoms in Criterion A developed during or soon after substance intoxication or withdrawal
    2. The involved substance is capable of producing the symptoms in Criterion A
C. The disturbance is not better explained by an anxiety disorder that is not substance induced. Such evidence of an independent anxiety disorder could include the following:
    1. The symptoms precede the onset of the substance use; the symptoms persist for a substantial period of time (e.g., about 1 month) after the cessation of acute withdrawal or severe intoxication; or there is other evidence suggesting the existence of an independent non-substance induced anxiety disorder
D. The disturbance does not occur exclusively during delirium
E. The disturbance causes clinically significant distress or impairment

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# DIAGNOSES ASSOCIATED WITH CLASS OF SUBSTANCE

| Substance | Anxiety | Depress | Bipolar | Psychotic | OC | Neurocognitive | Sleep | Delirium | Sexual |
|---|---|---|---|---|---|---|---|---|---|
| alcohol | I/W | I/W | I/W | I/W | | I/W/P | I/W | I/W | I/W |
| cannabis | I | | | I | | | I/W | I | |
| hallucinogen | I | I | I | I | | | | I | |
| inhalant | I | I | | I | | I/P | | I | |
| opioid | W | I/W | | | | | I/W | I/W | I/W |
| sedative | W | I/W | I/W | I/W | | I/W/P | I/W | I/W | I/W |
| stimulant | I/W | I/W | I/W | W | I/W | | I/W | I | I |
| caffeine | I | | | | | | I/W | | |
| tobacco | | | | | | | W | | |

Onset during I = intoxication; W = withdrawal
P = persisting

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# Diagnosis

- Substance induced anxiety disorder diagnosis should be made instead of substance intoxication or withdrawal only when panic attacks or anxiety predominate in the clinical picture and are severe enough to warrant clinical attention
- Panic or anxiety must have developed during or shortly after exposure to substance or withdrawal
- Substance must be capable of producing the anxiety symptom
- Panic or anxiety symptoms will usually improve or remit within days to 4 weeks (depending on the half-life of the substance and the presence of withdrawal)
- If panic or anxiety symptoms persist for substantial periods, other causes should be considered
- Urine toxicology may be helpful

# Prevalence

- Based on NESARC (Grant et al., 2004)
  - 12-month prevalence of independent anxiety disorders = 11.08% while presence of substance-induced anxiety disorders was <1%
  - In those with a current anxiety disorder (23 million), 50,980 experienced episodes that were classified as substance induced (0.002%)

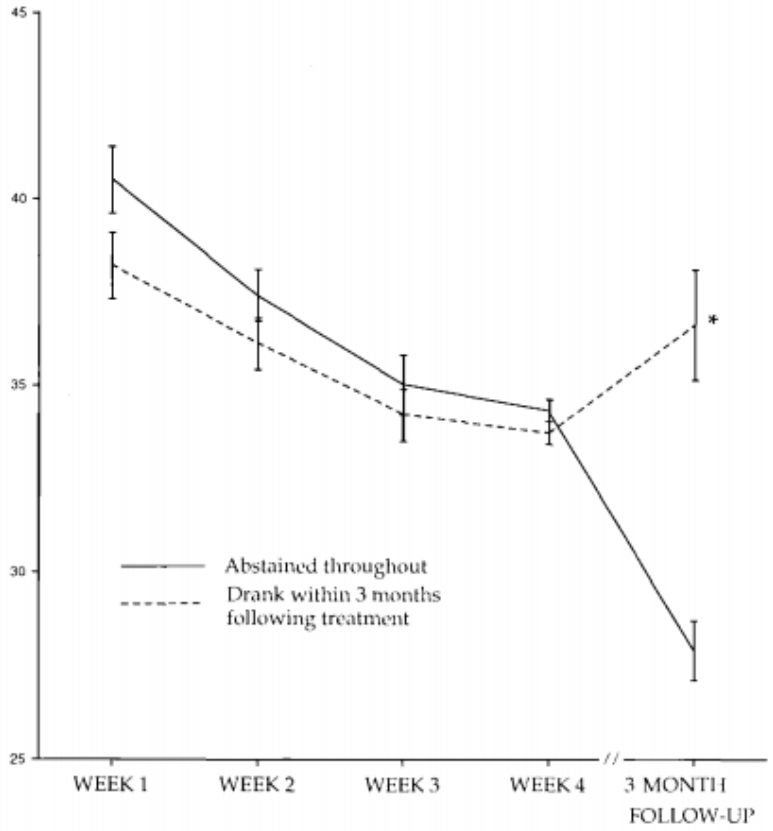
# Alcohol & Anxiety

171 men were assessed during4-week inpatient treatment and at 3-month follow-up

41% (n = 70) returned to drinking during 3-month follow-up period

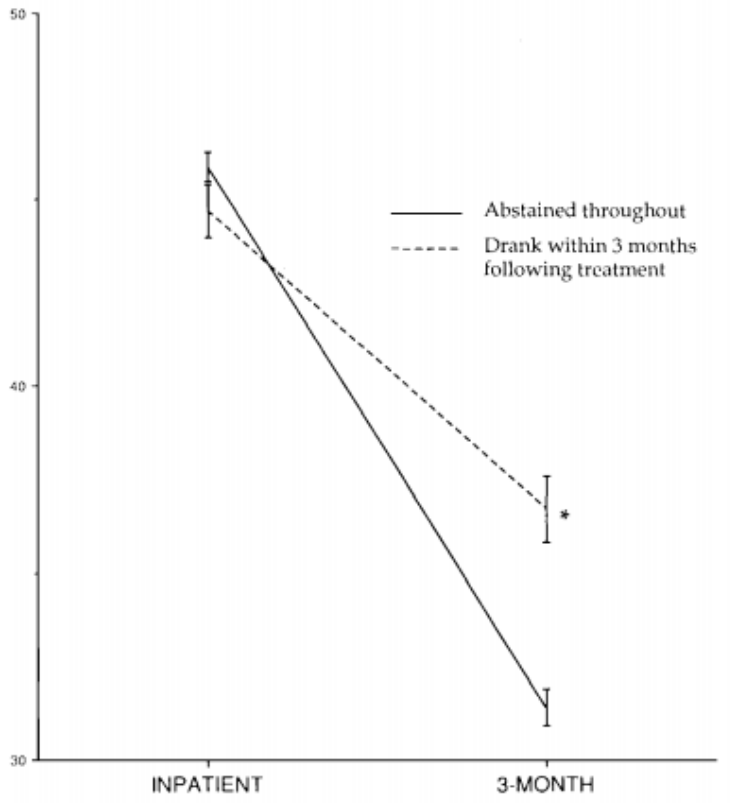
Those who abstained for the who 3-month period differed on anxie measures from those who return to drinking after treatment at the follow-up time point (F = 2.74, 1/150 df, p< .001).






* Significant group difference, $p < .001$.

Figure 1. Mean S-Anxiety scores of male primary alcoholics during and following treatment: abstainers vs relapsers




* Significant group difference, $p < .01$.

Figure 2. Mean T-Anxiety scores of male primary alcoholics: abstainers vs relapsers

Brown, Irwin, & Schuckit (1991)

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# Substance Induced Anxiety and Depression in Patients with OUD

| Anxiety Disorder/Depression | *N* | % |
|---|---|---|
| Substance-induced anxiety disorder | 105 | 21 |
| Generalized anxiety disorder | 11 | 2.2 |
| Substance-induced depression | 274 | 54.8 |
| Total | 336 | 67.2 |

Source

Substance-Induced Anxiety Disorder In Opioid Dependents

Addictive Disorders & Their Treatment4(4):157-159, December 2005.

500 consecutive admissions for OUD in Iran, interviewed for anxiety and depressive disorders per DSM-IV

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# Conclusions

- Substance-induced disorders may have symptoms that overlap with independent psychiatric disorders
- Important to get a timeline of onset of substance use and psychiatric symptoms
- Substance-induced disorders should clear within 1 month
- Lower likelihood of need for psychiatric medications for substance-induced disorders
- Abstinence from substance use is recommended for substance-induced disorders
- Primary disorders may benefit from treatment with medications and abstinence from substance use

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# QUESTIONS?

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