ANATOMY OF RELAPSE

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We're addicted to rehab. It doesn't even work.
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Last week, Lindsay Lohan left jail and entered a drug and alcohol rehabilitation facility. If the scene inspired deja vu, it wasn't just because it was the fourth time she had headed to rehab in four years. It was because the spectacle of a celebrity entering a drug and alcohol treatment center, relapsing, then heading to rehab again -- and again and again -- has become depressingly familiar.

For decades, Americans have clung to a near-religious conviction that rehab -- and the 12-step model pioneered by Alcoholics Anonymous that almost all facilities rely upon -- offers effective treatment for alcoholism and other addictions.

Here's the problem: We have little indication that this treatment is effective. When an alcoholic goes to rehab but does not recover, it is he who is said to have failed. But it is rehab that is failing alcoholics. The therapies offered in most U.S. alcohol treatment centers are so divorced from state-of-the-art of medical knowledge that we might dismiss them as merely quaint -- if it weren't for the fact that alcoholism is a deadly and devastating disease.

And the way we attempt to treat alcoholism isn't just ineffective, it's ruinously expensive: Promises Treatment Centers' Malibu facility, where Lohan reportedly went for her second round of rehab, in 2007, has stunning vistas, gourmet food, poolside lounging and acupuncture. It costs a reported $48,000 a month.

Even nonprofit facilities that don't cater to Hollywood types are too costly for most people. At the 61-year-old Hazelden center in Minnesota, which bills itself as "one of the world's largest and most respected private not-for-profit alcohol and drug addiction treatment centers," a typical 28-day stay costs $26,000.
Moral Problem

• Role of personal responsibility
  • Drug use is voluntary action; behavioral control or willpower is a factor in the onset of addiction
Social Problem

• Interdiction

• Law enforcement
Health Problem

- Prevention
- Treatment
Definition - *Medical*

- Of, relating to, or characterizing the study or practice of medicine.

- Requiring treatment by medicine.

  *The American Heritage® Stedman's Medical Dictionary
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Definition - *Disease*

- a disordered or incorrectly functioning organ, part, structure, or system of the body resulting from the effect of genetic or developmental errors, infection, poisons, nutritional deficiency or imbalance, toxicity, or unfavorable environmental factors; illness; sickness; ailment.

Definition - *Disease*

- an impairment of the normal state of the living animal or plant body or one of its parts that interrupts or modifies the performance of the vital functions and is a response to environmental factors (as malnutrition, industrial hazards, or climate), to specific infective agents (as worms, bacteria, or viruses), to inherent defects of the organism (as genetic anomalies), or to combinations of these factors: **SICKNESS, ILLNESS**

Role of Personal Responsibility

- Hypertension
  
  - Salt use is largely determined by familial patterns and individual choice
  
  - Salt sensitivity is a genetically transmitted risk factor for the development of hypertension
Role of Personal Responsibility

- Hypertension

- Risk factors such as obesity, stress level, and inactivity are influenced by familial, cultural, and personal choice factors
Role of Personal Responsibility

• Addiction

• Choice to use the drug is voluntary
Role of Personal Responsibility

• Addiction

  • Choice to use the drug is voluntary

  • Effect of the drug may be profoundly influenced by genetic factors
Role of Personal Responsibility

• Addiction

  • Choice to use the drug is voluntary

  • Effect of the drug may be profoundly influenced by genetic factors
    • Those whose initial physiological response is extremely pleasurable will be more likely to repeat the drug use
Genetic Heritability

• Reliable method for estimating the level of genetic contribution in a disease is to compare the rates of the disorder in monozygotic and dizygotic twins
Genetic Heritability

- Hypertension
  - 0.25 to 0.50

- Diabetes
  - 0.80 for Type II
  - 0.30 to 0.55 for Type I

- Asthma
  - 0.36 to 0.70
Genetic Heritability

- Addiction
  - 0.34 for males / heroin dependence
  - 0.55 for males / alcohol dependence
  - 0.52 for females / cannabis dependence
  - 0.61 for nicotine dependence, both sexes
Genetic Heritability

• Sons of alcohol dependent fathers inherit an inherent tolerance to the effects of alcohol and are less likely to experience hangovers than sons of non-alcoholic fathers
Genetic Heritability

- The inherited presence of an aldehyde dehydrogenase genotype causes “flushing” producing a very unpleasant initial reaction to the use of alcohol
  - 35% Chinese population homozygous
  - 20% Jewish males in Israel
- Virtually no alcohol dependence with this genotype
Genetic Heritability

- Army heroin study
  - Majority of Viet Nam era soldiers physically dependent upon heroin stayed clean after return to US / detox
  - Twenty percent continued to use substances in an addictive pattern
Comparing Outcomes

- Hypertension, Diabetes, and Asthma are chronic diseases requiring continuing care.

- Treatments are effective but heavily dependent on adherence to the medical regimen for that effectiveness.
Comparing Outcomes

• Diabetes Mellitus Type I – less than 60% fully adhere to medication regimen

• Hypertension and asthma – less than 40% fully compliant with medication regimen
Comparing Outcomes

- With Diabetes, Hypertension, and Asthma, less than 30% compliance with dietary and behavioral changes
Comparing Outcomes

- 30% to 50% of patients with Diabetes, and 50% to 70% of patients with Hypertension and Asthma experience recurrence of symptoms each year to the point that additional medical care is necessary to reestablish symptom remission.
Comparing Outcomes

- Low socioeconomic status, psychiatric comorbidity, and lack of family and social support are the most important predictors of poor adherence and relapse.
Comparing Outcomes

- Relapse among patients with diabetes, hypertension, and asthma following cessation of treatment has been considered evidence of the effectiveness of those treatments and reinforces the need to retain patients in medical monitoring.
Comparing Outcomes

- Examinations of untreated, dependent persons offers some indication of the natural course of the addiction
Comparing Outcomes

• Addiction

  • Detox alone is not effective in altering the course of the disease!

  • Typically 40% to 60% continuously abstinent at one year post-discharge
    • 15% to 30% not abstinent, but have not returned to dependence
Comparing Outcomes

• Addiction
  • Typically 40% to 60% continuously abstinent at one year post-discharge
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• Low socioeconomic status, psychiatric comorbidity, and lack of family and social support are the most important predictors of poor adherence and relapse
Comparing Outcomes

• Relapse to alcohol or drug use in the addicted patient following discharge from addiction treatment has been considered evidence of treatment failure.
Definitions

- POTTER STEWART
  - “I know it when I see it”
Definitions

- **RECIDIVISM**
  
  - Chronic tendency to return to criminal behavior
Definitions

• sobriety

• Sobriety
Definitions

• RECOVERY
Definitions

• RECOVERY

  • Recovery from substance dependence is a voluntarily maintained lifestyle characterized by sobriety, personal health, and citizenship

  • Betty Ford consensus panel 2007
Definitions

- SLIP
- LAPSE
- RELAPSE
Definitions

- LAPSE
  - The initial episode of substance use after a period of abstinence
Definitions

- RELAPSE

  - Continued use after the initial slip

  - “Breakdown or set-back in the person’s attempt to change or modify any target behavior”
Definitions

- RELAPSE

- After a period of abstinence, recurrent substance use characterized by at least one of the DSM criteria for abuse or dependence
Definitions

• RELAPSE

• Return of a disease after it’s apparent cessation

• Dorland’s Medical Dictionary, circa 1979
Definitions

• RELAPSE

  • relapse was defined as having 5 or more drinks on any single occasion for men and 4 or more drinks for women, or drinking 5 or more days within one week, or attending a treatment session intoxicated.

  • Volpicelli, O’Malley, JAMA 1992
Intrapersonal Determinants

- Self-Efficacy
  - “I can handle it”
  - Highly predictive of relapse – in short term and long term
Intrapersonal Determinants

- Expectancies
  - Anticipation of positive outcomes from engaging in recovery
  - Strongly related to outcome, *but* little evidence that challenging expectancies in treatment leads to changes in relapse
Intrapersonal Determinants

- Cravings

  - Cognitive experience focused on the desire to use a substance and highly related to expectation of positive effect of the substance

  - Generally, poor predictor of relapse

  - Behavioral techniques and medications may reduce cravings
Intrapersonal Determinants

- Motivation
  - Commitment to positive behavior change
  - Ambivalence must be addressed
  - Motivation without coping skills is not protective (faith without works)
Intrapersonal Determinants

- Coping
  - Ability to utilize effective behaviors in dealing with high risk situations
  - In CBT models, coping is the most critical predictor of outcomes
Intrapersonal Determinants

• Emotional State

  • Ability to regulate emotional state

  • Relapse is predictable to ameliorate negative emotional state or reproduce positive emotional state
Interpersonal Determinants

• Social support

• Emotional support

• Interpersonal conflict

• Social pressure to continue to use
Relapse Prevention Interventions

• Strategy 1

• Help patients understand relapse as a process and learn to identify warning signs
Relapse Prevention Interventions

• Strategy 2

• Help patients identify their high-risk situations and develop effective cognitive and behavioral coping
Relapse Prevention Interventions

- Strategy 3

- Help patients enhance their communication skills and interpersonal relationships and develop a recovery social network
Relapse Prevention Interventions

- Strategy 4

- Help patients identify, reduce, and manage negative emotional states
Relapse Prevention Interventions

• Strategy 5

• Help patients identify and manage cravings and cues that precede cravings
Relapse Prevention Interventions

- Strategy 6

- Help patients identify and challenge cognitive distortions
Relapse Prevention Interventions

• Strategy 7

• Help patients work toward a more balanced lifestyle
Relapse Prevention Interventions

• Strategy 8

• Consider the use of medications with psychosocial treatments
Relapse Prevention Interventions

- Strategy 9

- Facilitate the transition between levels of care for patients completing residential treatment, PHP, and IOP
Relapse Prevention Interventions

• Strategy 10

• Incorporate strategies to improve adherence to treatment and medications
PODAT 5

- Remaining in treatment for an adequate period of time is critical. The appropriate duration for an individual depends on the type and degree of his or her problems and needs. Research indicates that most addicted individuals need at least 3 months in treatment to significantly reduce or stop their drug use and that the best outcomes occur with longer durations of treatment. Recovery from drug addiction is a longterm process and frequently requires multiple episodes of treatment. As with other chronic illnesses, relapses to drug abuse can occur and should signal a need for treatment to be reinstated or adjusted. Because individuals often leave treatment prematurely, programs should include strategies to engage and keep patients in treatment.
PODAT 12

- Drug use during treatment must be monitored continuously, as lapses during treatment do occur. Knowing their drug use is being monitored can be a powerful incentive for patients and can help them withstand urges to use drugs. Monitoring also provides an early indication of a return to drug use, signaling a possible need to adjust an individual's treatment plan to better meet his or her needs.
• “Relapse has nothing to do with prevention of withdrawal symptoms, but everything to do with the selfish brain’s selective memory of the pleasure associated with alcohol and drug use, and a selective forgetting of the pain of addictive substance use.”
Pathophysiology

- Challenge is to find a consistent sequence from:
  - Molecular events to
  - Cellular events to
  - Profound and lasting changes in behavior, cognition, and motivation
**Mesocorticolimbic System**

- The brain circuitry involved in most of the actions of addictive drugs in the *Ventral Tegmental Area* connecting the limbic cortex through the midbrain to the *Nucleus Accumbens*
- Projections into *Frontal Cortex*
Pathophysiology

- Dopamine is the key neurotransmitter in the Mesocorticolimbic reward pathway

- Drugs of abuse increase firing of VTA dopaminergic neurons resulting in supranormal DA levels

- Behavior which results in increased DA release are reinforcing
Pathophysiology

- Neurotransmitters involved
  - Alcohol
    - Enhances GABA activity
    - Inhibits Glutamate
Pathophysiology

• Endogenous Opioid System in the mesocorticolimbic reward pathway mediates DA release

• Mu receptors cause endorphin release which stimulates DA release
Pathophysiology

• GABA is the primary inhibitory neurotransmitter in the brain, Glutamate is excitatory
• DA receptors in the mesocorticolimbic reward system are located on GABA producing neurons
• GABA produces tolerance and dependence
• Alcohol enhances GABA activity and inhibits Glutamate activity
Pathophysiology

• Marijuana stimulates DA release through CB1 and CB2 endocannabinoid receptors

• Cocaine indirectly increases DA activity by inhibiting DA reuptake transport process

• Amphetamine increases DA activity by increasing DA release
Pathophysiology

- Drugs of abuse at some dose, frequency, and chronicity will reliably produce lasting, likely permanent, pathophysiologic changes in the reward circuit, in the normal levels of many neurochemicals, and in the stress response system.
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Pathophysiology

• Chronically elevated DA levels result in a compensatory reduction in DA receptors (**Downregulation**)

• Addicted pts have a reduced number of D2 DA receptors and synthesize less DA than healthy controls
Pathophysiology

- In addicted patients, there are significantly more Mu Opioid receptors (*Upregulation*) than healthy controls.

- This finding correlates with severity of craving.
Pathophysiology

• During active addiction, GABA release is dramatically elevated

• A compensatory elevation in Glutamate results in tolerance

• In abstinence, unopposed Glutamate results in hyperexcitability
Pathophysiology

• Somatic signs of withdrawal may last several days

• Motivational and cognitive impairments may last several months

• Learned aspects of tolerance to the drug may never return to normal
Pathophysiology

- Enduring pathology influencing tendency to relapse lies in the integration of the reward circuitry with the motivational, emotional, and memory centers in the limbic system.

- Learns signals for rewards and responds in an anticipatory manner.
Pathophysiology

- Repeated pairing of drug use with a:
  - Person (drug using friend)
  - Place (corner bar)
  - Thing (paycheck)
  - Emotional state (anger, depression)

- Produces a significant conditioned physiologic reaction (craving)
PHILOSOPHY

- Standard response to lapse? Slip? Relapse
- Punitive?
- Protect community?
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