Causes and Treatment of Substance-Related Disorders (Chapter 10)

Familial and Genetic Influences

Alcoholism has been demonstrated to have a genetic component, especially among men.

Seems to be a common genetic influence for abuse of:
marijuana
cocaine
hallucinogens
sedatives
stimulants
opiates

Use is influenced by cultural and environmental factors, abuse and dependence related to genetic factors.

Psychological Dimensions

Pos & neg reinforcement. Includes the reinforcers presented by the social situation.

Underlying idea that people abuse or become dependent on drugs to cope with unpleasant feelings/life circumstances.

42% of young men in Vietnam War experimented w/heroin, as it was readily available and helped them deal with the stress of war.

Only 12% were still using heroin 3 years after return to the US.

Survivors of trauma (such as sexual abuse) are more likely to abuse alcohol.

Studies of young adolescents have shown that those who report negative affect are more likely to use drugs and alcohol.

So addressing life circumstances and anxiety and mood disorders should play a part in treatment.

The negative after-effects of drug/alcohol use (hangovers, crashes) can increase motivation to take more of the drug. Tolerance increases, requiring more to achieve the same effect, while the crash intensifies, encouraging continued use. (Motivation shifts from pos reinf to neg reinf.)

Self-medication implies that a person has a disorder that they are attempting to treat through the use of substances. If these are treated appropriately, it should decrease the need for the drug. (Cocaine addicts with ADHD treated with Ritalin stopped using cocaine.)
**Neurobiological Influences**

Positive reinforcements due to activation of the "pleasure pathways" of the brain. Well established in animals, still not clear which areas of the brain are involved in the pleasure response for humans, and how various substances can all cause a similar response.

Negative reinforcement by eliminating aversive experiences--anxiety, pain, boredom.

Anxiolytic effects of alcohol and some other drugs may be due to enhancing the activity of GABA, which inhibits the brain's normal reaction to anxiety-producing situations.

First reaction to alcohol is euphoria, after several hours sadness and depression. Sons of alcoholics tend to be more sensitive to alcohol when first ingested, and then less sensitive as the hours pass. Ten-year follow-up showed that those with that pattern tended to drink more heavily and more often.

**Cognitive Factors**

Expectancy effect--behaving consistent with expectations for what the drug will do. This can happen even when a placebo is ingested.

Beliefs that drugs will have positive effects can influence drug use.

Cravings can develop in response to associated stimuli (sight, smell of alcohol, paraphernalia associated with drug use, places of friends associated with drug use, mood states, availability of the drug, etc).

**Social Dimensions**

Influence of people we associate with and images of drug use to which we are exposed will have an effect on drug use and abuse.

Views of drug users:
Moral Weakness--failure of self-control in the face of temptation
Disease Model--a physiological disorder that is no fault of the victim's

Neither does justice to the very complex interrelationship of biological, psychological, and socio-cultural factors involved.
Cultural Dimensions

Preference for psychoactive substance is influenced by one's culture. Cultural norms about acceptable and unacceptable substance use plays a part. (Heavy alcohol use on certain occasions--book mentions Korea, and the apparent influence on high rates of alcoholism among Koreans. But we can also take the example of Purim. Jews are not supposed to get drunk throughout the year, only on Purim. However, we do have wine at every Shabbos and holiday throughout the year, which we are expected to drink in moderation and not become drunk. Jews generally have a low rate of alcoholism.)

TREATMENTS:

Biological Treatments:

Agonist Substitution

Methadone - Heroin
Developed in Germany during WWII, originally called Adolphine
Does not give quick high, like Heroin, but does give analgesia and sedative effects.
Loses those effects w/tolerance.
Can develop metadone addiction instead, because of cross-tolerance.

Nicotine gum or patch because they do not have the carcinogens of tobacco.
Dose is tapered off.
Works best when combined with counseling. High relapse without.
20% become dependant on the gum.
Patch easier and more regulated and steady dose. Somewhat more effective than gum.

Antagonist Treatments

Naltrexone counteracts effects of opiates. Needs to be combined with ongoing psychological treatment, as well.
Produces immediate withdrawal symptoms (very unpleasant!)
So first withdraw from opiates before starting naltrexone. Requires high motivation to continue with treatment.

Naltrexone has also been useful in treating alcoholics, in combination with a comprehensive treatment plan. (Higher success rates for those w/the drug than without.)
**Aversive Treatments**

Antabuse (disulfiram) for alcohol dependence. Prevents breakdown of acetaldehyde (a by-product of alcohol), causing feelings of illness--nausea, vomiting, elevated heart rate and respiration. Taken each morning. Noncompliance is the major problem!

Silver nitrate in lozenges and gums used to make smoking aversive. Combines with saliva to produce a bad taste in the mouth of a smoker. Not that effective.

Treatment of Withdrawal Symptoms
Clonidine for opiate withdrawal, benzodiazepines for alcohol withdrawal, etc.

**Psychological Treatments:**

**Inpatient treatment** is extremely expensive ($15K), but may not be any more effective than high-quality outpatient programs which cost 90% less.

**AA and Variations**

1935 - Bill W - The addiction is more powerful than the individual, so s/he must appeal to a "Higher Power". Twelve Steps on page 419

Very effective for some people, but it is unknown what the percentages are, or who is more likely to succeed.

**Controlled Use**

Rather than abstinence (as is taught by AA), this approach teaches controlled, socially appropriate drinking. Not popular approach in the US, but widely accepted in the UK. Studies suggest they are equally effective, but with either approach there is a 70-80% relapse rate in the long term!

**Aversion Therapy**

Mild shock or covert sensitization.

**Contingency Management**

Reinforcers are agreed upon for reaching certain goals (e.g., negative urine samples). Found more effective than traditional counseling/twelve-step.

**Community Reinforcement Approach**—to deal with the various factors influencing drug use

1. Non-using friend or relative is recruited to participate in relationship therapy and help client improve relationships with other important people.
2. Clients are taught to identify the antecedents and consequences that influence drug-taking (A-B-C analysis).
3. Given assistance with employment, education, financial problems, other social services, to reduce life stress.
4. New recreational options are developed to replace drug use.
Individualizing treatment, for instance to deal with other psychological disorders, can improve outcomes. Also identifying factors that indicate which particular approach is more likely to help a given individual.

Relapse Prevention

1. Cognitive and behavioral coping skills to deal with urges.
2. Examining beliefs about positive aspects of drug use, and confronting negative consequences of drug use.
3. High-risk situations are identified.
4. Strategies developed to deal with those situations are developed.
5. Relapses are dealt with as episodes from which one can learn and recover, due to temporary stress and situations that can be changed.

This approach has been found effective for alcohol, marijuana, smoking, and cocaine abuse.

Prevention

Approaches tried so far, such as education and DARE (involving rewards for commitments not to use drugs, etc.) have not been very effective.

More extensive community/cultural changes, such as enforcing laws against underage access to alcohol, harsher laws against drunk driving, etc, etc, seem to have a bigger impact.