UNDERSTANDING THE DISEASE OF ADDICTION

by

Suresh Joseph
Summary of Presentation

- Addiction as a disease
- Medical harm of substance use
- Treatment models for substance dependence
- Local support services for recovering addicts.
• WHAT CAUSES ADDICTION?
A Lack of Willpower?

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An “amoral” condition?

Morality is simply the attitude we adopt towards people whom we personally dislike.

(Oscar Wilde)
A Brain disease?
• “Chemical Dependency has nothing to do with poor morals or willpower.”

- Dr Jane Nakken
Animal Studies

Drugs have an extremely strong reinforcing effect in animals.
Figure 3.4  Similar patterns of opioid intake in a human and a rhesus monkey under con-
THE LIMBIC SYSTEM - THE REWARD CENTRE

Dopamine driven system

- Responds to drugs
- Responds to food
- Responds to sex
- Sends signals to your frontal cortex.
- The reward center becomes abnormal in addicts
VTA: the “gas tank”: supplies dopamine to the Nucleus Accumbens
Dopamine D2 Receptors are Lower in Addiction

Cocaine

Alcohol

Heroin

control

addicted

DA D2 Receptor Availability

Reward Circuits
Non-Drug Abuser

Reward Circuits
Drug Abuser
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Reward Circuits

Non-Drug Abuser

Drug Abuser
NATURE VS NUTURE

ARE ADDICTS BORN OR ARE THEY MADE?
Genetic Factors?

ΔFosB

Gene Transcription Factor
Definition of addiction 1
ASAM working definition

A chronic progressive disease of brain reward characterized by the following physical and psychological symptoms:

- Compulsion
- Craving
- Loss of Control
- Continued use despite consequences, and
- Chronic use
Definition of Addiction 2  
DSM IV

a state characterized by compulsive engagement in rewarding behavior or compulsive drug use, despite adverse consequences.

This is characterised by:

- Compulsion
- Altered Tolerance
- Sterotyped behaviour
- Primacy
- Repeated attempts to quit
- Repeated withdrawal
- Reinstatement
COMMONEST DRUGS OF ABUSE IN SINGAPORE

- Alcohol
- Heroin
- Methamphetamine (ICE, Crystal meth, Glass)
- Cannabis (marijuana)
FOOD
SEX ADDICTION
GAMBLING
Cross Addiction

“Addictions more than co-exist. They interact, reinforce and become part of one another.”

Dr. Patrick Carnes
CONSEQUENCES OF ADDICTION
NEUROLOGICAL
Wernike-Korsakoff Syndrome

Wernike’s encephalopathy (wet brain)

• Caused by thiamine (B₁) deficiency
  – Eye muscles are paralyzed
  – Ataxia (can’t walk straight)
  – Encephalopathy: confusion, agitation, restlessness
Korsakoff’s psychosis

• Confabulation: make things up
• Retrograde amnesia: can’t remember what happened in the past
• Anterograde amnesia: can’t remember info you are given (remember these 3 objects...)
• peripherhal nerve damage
Drug-induced Psychosis

- Methamphetamine (Crystal Meth, ICE)
- Cocaine bug
- Synthetic Marijuana
- Alcohol
Infectious Diseases

- HIV
- Hepatitis C
- Infective Endocarditis
- Skin infections
Liver disease

- Liver cirrhosis
- Hepatitis C
Ascites/Jaundice
Caput Medusae
Esophageal Varices
ICE
Heroin: endocarditis
Intravenous Drug Abuse (IVDA)
Anthrax!
TREATMENT OF ADDICTION

THE SOLUTION?
Blood Flow Recovery

Non users

Cocaine users, 10 days sober

Cocaine Users, 100 days sober

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Blood Flow Recovery

Non users

Cocaine users, 10 days sober

Cocaine Users, 100 days sober
Blood Flow Recovery

Non users

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Blood Flow Recovery

Non users

Cocaine users, 10 days sober

Cocaine Users, 100 days sober
TREATMENT OF ADDICTION:
Medical

Medical Detoxification
Treating withdrawal

- Alcohol
- Opiates
- Benzodiazepines
- Methamphetamine
TREATMENT OF ADDICTION: Medical

Treatment of Co-morbid disorders

• Depression
• Anxiety disorders
• Insomnia and Adjustment disorders
• STDs
• Anger management
• Nutritional and general health issues
TREATMENT OF ADDICTION: Medical

Agonists:
Replacement and Harm reduction

– Suboxone/subutex for opiate dependence
– Methadone for opiate dependence
– Nictotine patches for tobacco dependence.
TREATMENT OF ADDICTION: Medical

Antagonists:

Opposite effect of the drug

– Naltrexone for opiate dependence
– Naltrexone for alcohol dependence
– Naltrexone for Pathological gambling
– Disulfiram (Antabuse) for alcohol dependence
Treatment of addiction:
Cognitive Behavioral Therapy (CBT)

• Addictive behaviour is the result of irrational thinking and false beliefs
• Change the irrational thinking, change the false beliefs, change the behaviour.
• Change is brought about by challenging irrational thinking and false beliefs.
I'M JUST GOING TO USE.

There's no way that I can stop using.

Flawed Beliefs/Thinking

Behavior

Pitiful, Inc omprehensible Demoralization

Thoughts

Mood

Beliefs

Drinking!
GROUP THERAPY
Inpatient Rehabilitation
12 Step Solution
Twelve Step Programs

Addicts in Recovery
400 W. Cummings Park #1700 Woburn, MA 01801

AA

NN

OVEREATERS ANONYMOUS

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Addicts CAN and DO RECOVER!!
THANK YOU