MODULE 1

DRUG DEPENDENCE AND BASIC COUNSELLING SKILLS
Training goals

- Increase knowledge on the neurobiology of drug addiction, principles of treatment and basic counselling strategies
- Increase skills in basic counselling strategies for drug dependence treatment
- Learn how to apply basic counselling skills for drug dependence treatment and care
Module 1

Drug dependence and basic counselling skills

1. Biology of drug dependence
2. Principles of drug dependence treatment
3. Basic counselling skills for drug dependence treatment
4. Special considerations when involving families in drug dependence treatment
Pre-assessment
Icebreaker
Icebreaker

Please share some or all of the following information with your group (if you don’t feel comfortable, then you may pass):

a) My name is____________________.
b) My family is originally from__________________.
c) I am currently living in____________________.
d) I am a student at_________; a volunteer at ________; or work for___________.
e) I became interested in my field because___________.
f) The thing I like most about what I do is___________.
g) I am attending this training because___________. 
Workshop 1

Biology of drug dependence
At the end of this workshop you will be able to:

► Understand the reasons people start drug use
► Identify 3 main defining properties of drug addiction
► Identify 3 important concepts in drug addiction
► Understand characteristics and effects of major classes of psychoactive substances
► Understand why drug dependent people frequently require treatment
Introduction to psychoactive drugs
What are psychoactive drugs?

“…Any chemical substance which, when taken into the body, alters its function physically and/or psychologically....”

World Health Organization, 1989

“…Any substance people consider to be a drug, with the understanding that this will change from culture to culture and from time to time.”

Krivanek, 1982
What are psychoactive drugs?

Psychoactive drugs interact with the central nervous system (CNS) affecting:

► Mental processes and behaviour
► Perceptions of reality
► Level of alertness, response time and perception of the world
Why do people initiate drug use?

There is a believe that drug use is motivated (at least initially) by the pursuit of pleasure. However, according to scientific evidence, there are factors such as exposure to abuse, neglect, violence, etc., especially in childhood, leading to vulnerabilities to initiate drug use.
Why do people initiate drug use?

Drug use initiation often starts through:
- Peer pressure
- Personality disorder
- Comorbid psychiatric disorder
- Experimental use
Key motivators & conditioning factors

► Stress/pain amelioration
► Functional (purposeful)
► Fun (pleasure)
► Psychiatric disorders
► Social/educational disadvantages
**Why do people initiate drug use?**

<table>
<thead>
<tr>
<th>Drug use INITIATION starts through:</th>
<th>Key MOTIVATORS &amp; conditioning factors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Vulnerability conditions due to abuse, violence and neglect in early childhood</td>
<td>• Stress/pain amelioration</td>
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<tr>
<td>• Experimental use</td>
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After repeated drug use, “deciding” to use drugs is no longer voluntary because

DRUGS AFFECT THE BRAIN!
What is drug addiction?
What is drug addiction?

Drug addiction is a complex illness characterised by compulsive and at times, uncontrollable drug craving, seeking, and use that persist even in the face of extremely negative consequences.

(NIDA, 1999)

Substance dependence is not a failure of will or of strength of character but a medical disorder that could affect any human being. Dependence is a chronic and relapsing disorder, often co-occurring with other physical and mental conditions.

(WHO, 2004)
Characteristics of drug addiction

- Compulsive behaviour
- Behaviour is reinforcing (rewarding or pleasurable)
- Loss of control in limiting intake
Important terminology

- Psychological craving
- Tolerance
- Withdrawal symptoms
Psychological craving

- Craving refers to the desire or urge to re-experience the effect of a previously experienced psychoactive substance.
- It is often described as the subjective experience (psychological) of the motivational state that increases the likelihood of drug use (although it is not directly responsible for it).
- Cravings are most apparent during drug withdrawal and when exposed to triggers.
Psychological craving

Craving can also be described as the conscious/subjective experience of the following:

► Feelings of urge
► Physical/physiological sensations (heart rate increase, perspiration, etc.)
► Actual temptation
► Uncontrollable thoughts
Psychological craving features

► Craving tends to be highly associated with the context

► Triggers are stimuli previously associated with drug use:
  – people
  – places
  – paraphernalia
  – money
  – certain days of the week, etc.

► Craving can persist far beyond the cessation of drug use
Psychological craving is a complex phenomenon

► Craving report and drug use is not as tightly related as initially thought

► Craving report and cue reactivity (heart rate, sweat-gland activity, blood pressure, temperature, etc.) don’t show a systematic co-variation among studies

► More research is needed to clarify this complex phenomenon in order to improve treatment programs
Tolerance

Tolerance is a state in which a person no longer gets the expected responses from a drug as it was experienced before. A higher dose is now required to achieve the same effect.
Withdrawal symptoms

Physiological reactions that occur when after a period of using a drug this habit is discontinued. The reaction could be mild e.g., tobacco to life threatening e.g., alcohol.
Withdrawal symptoms

The following symptoms may occur when drug use is reduced or discontinued:

► Tremors, chills
► Cramps
► Emotional problems
► Cognitive and attention deficits
► Hallucinations
► Convulsions
► Death
Drug categories
Classifying psychoactive drugs

The following classification is based on the psychoactive effects of drugs. It is intended as a general guide to better understand relative drug effects, harms and potential withdrawal features.

Variations in effects and intensity for drugs in the same category may occur for drugs within the same class.
Classifying psychoactive drugs

<table>
<thead>
<tr>
<th>Depressants</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Slow down the CNS</strong> and body functions, such as heart rate, breathing, blood pressure, etc. and behaviour e.g., slow/uncoordinated movements, slurred speech, etc.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Stimulants</th>
</tr>
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<tbody>
<tr>
<td>• <strong>Speed up the CNS</strong> and body functions. It can be noticed on mood – happy, excited, euphoria; cognitive performance – better concentration, increased alertness; and behaviour – insomnia, fast movements/speech, etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hallucinogens</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Alter states of perception and feelings</strong>, there are 3 types. <strong>Psychedelics</strong>: feeling new ways of relating with their inner mind. <strong>Dissociative</strong>: feelings of being separated from one’s body and environment. <strong>Delirants</strong>: confusional state and problems to focus attention.</td>
</tr>
</tbody>
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Classifying psychoactive drugs

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<th>Depressants</th>
<th>Stimulants</th>
<th>Hallucinogens</th>
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<tbody>
<tr>
<td>Alcohol (high doses)</td>
<td>Alcohol (low doses)</td>
<td>LSD, DMT</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>Amphetamines</td>
<td>Mescaline</td>
</tr>
<tr>
<td>Opioids</td>
<td>Methamphetamine</td>
<td>PCP</td>
</tr>
<tr>
<td>Solvents</td>
<td>Cocaine</td>
<td>Ketamine</td>
</tr>
<tr>
<td>Barbiturates</td>
<td>Nicotine</td>
<td>Cannabis (high doses)</td>
</tr>
<tr>
<td>Cannabis (low doses)</td>
<td>Khat</td>
<td>Magic mushrooms</td>
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<tr>
<td></td>
<td>MDMA</td>
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</tr>
</tbody>
</table>
Alcohol
Description
► Alcohol or ethylalcohol (ethanol) is present in varying amounts in beer, wine, and liquors

Route of administration
► Oral

Acute psychological effects
► Sedation, euphoria, slowed reaction time, impaired coordination

Acute physiological effects
► Lower heart rate and respiration, coma, death
Withdrawal Symptoms:

- Tremors, chills
- Cramps
- Hallucinations
- Convulsions
- Delirium tremens
- Death
Long-term effects of regular use/abuse of alcohol

- Decrease in blood cells leading to anaemia, slow-healing wounds and other diseases
- Brain damage, loss of memory, blackouts, poor vision, slurred speech, and decreased motor control
- Increased risk of high blood pressure, hardening of arteries, and heart disease
Long-term effects of regular use/abuse of alcohol

- Liver cirrhosis, jaundice, and diabetes
- Immune system dysfunction
- Stomach ulcers, haemorrhaging, and gastritis
- Thiamine (and other) deficiencies
- Testicular and ovarian atrophy
- Harm to a foetus during pregnancy
- Increased risk for different types of cancer
Tobacco
Tobacco: basic facts

Description
► Tobacco products contain nicotine plus more than 4,000 chemicals and a dozen gases (mainly carbon monoxide)

Route of administration
► Smoking, chewing

Acute psychological effects
► Relaxation, pleasure, increased concentration

Acute physiological effects
► Release of glucose, increased blood pressure, respiration and heart rate
Withdrawal symptoms:

- Cognitive/attention deficits
- Sleep disturbance
- Increased appetite
- Hostility
- Irritability
- Low energy
- Headaches
Long-term effects of tobacco use

- Aneurysm
- Cataracts
- Cancer (lung and other types)
- Obstructive pulmonary diseases
- Heart disease (stroke, heart attack)
- Vascular disease
- Harm to a foetus during pregnancy, low weight at birth
- Chronic bronchitis
- Emphysema
- Asthma symptoms
Cannabis
Cannabis: basic facts

Description
The active ingredient in cannabis is delta-9-tetrahydrocannabinol (THC)

► Marijuana: Tops and leaves of the plant Cannabis sativa
► Hashish: More concentrated resinous form of the plant

Route of administration
► Smoked as a cigarette or in a pipe
► Oral, brewed as a tea or mixed with food
Let’s think!

► What are the names for marijuana in your community?

► How is this drug is consumed?
## Cannabis: basic facts

### Acute PHYSIOLOGICAL effects:
- Increased heart rate and blood pressure
- Increased appetite
- Dry mouth
- Bloodshot eyes
- Reduced nausea

### Acute PSYCHOLOGICAL effects:
- Altered time sense
- Mood changes
- Impaired short-term memory
- Reduced cognitive capacity (e.g. judgment, attention)
- Paranoid ideation/psychotic episodes
- Impairs coordination and balance
Cannabis: basic facts

Withdrawal Symptoms:

- Insomnia
- Restlessness
- Loss of appetite
- Irritability
- Sweating
- Tremors
- Nausea
- Diarrhoea
Long-term effects of cannabis use:

- Increase in activation of stress-response system
- Amotivational syndrome
- Changes in neurotransmitter levels
- Psychosis in vulnerable individuals
- Increased risk for cancer, especially lung, head and neck
- Respiratory illnesses (cough, phlegm) and lung infections
- Immune system dysfunction
- Harm to a foetus during pregnancy
Stimulants, ATS and cocaine
Amphetamine Type Stimulants (ATS):

- Methamphetamine
- Speed, crystal, ice, yaba, shabu
- Amphetamine
- Pharmaceutical products used for ADD and ADHD

Methamphetamine half-life: 8-10 hours.
Types of stimulants

► Cocaine
► Powder cocaine (Hydrochloride salt)
► Smokeable cocaine
  – Crack
  – Rock
  – Freebase

Cocaine half-life: 1-2 hours.
Let’s think!

What stimulants are used in your community and how are they consumed?
Description
Stimulants increase alertness and arousal by stimulating the central nervous system. They include:
► A group of synthetic drugs (ATS)
► Plant-derived compounds (cocaine)

Route of administration
Smoked, injected, snorted or administered by mouth or rectum
## Stimulants: basic facts

<table>
<thead>
<tr>
<th>Acute PSYCHOLOGICAL effects:</th>
<th>Acute PHYSIOLOGICAL effects:</th>
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</thead>
<tbody>
<tr>
<td>• Euphoria, rush or flash</td>
<td>• Decreased appetite</td>
</tr>
<tr>
<td>• Wakefulness, insomnia</td>
<td>• Increased respiration</td>
</tr>
<tr>
<td>• Irritability</td>
<td>• Increased physical activity</td>
</tr>
<tr>
<td>• Anxiety</td>
<td>• Hyperthermia</td>
</tr>
<tr>
<td>• Paranoia</td>
<td>• Tremors, convulsions</td>
</tr>
<tr>
<td>• Aggressiveness</td>
<td></td>
</tr>
</tbody>
</table>
Stimulants: basic facts

Withdrawal symptoms:

► Dysphoric mood (sadness, anhedonia)
► Fatigue
► Insomnia or hypersomnia
► Psychomotor agitation or retardation
► Craving
► Increased appetite
► Vivid, unpleasant dreams
Long-term effects of stimulants

- Strokes, seizures, headaches
- Depression, anxiety, irritability, anger
- Memory loss, confusion, attention problems
- Insomnia, hypersomnia, fatigue
- Paranoia, hallucinations, panic reactions
- Suicidal ideation
Long-term effects of stimulants

- Nosebleeds, chronic runny nose, hoarseness, sinus infection
- Dry mouth, burned lips, worn teeth
- Chest pain, cough, respiratory failure
- Disturbances in heart rhythm and heart attack
- Loss of libido
- Weight loss, anorexia, malnourishment
- Skin problems
Methamphetamine use
Serious and permanent scars caused by scratching in a Methamphetamine user
Methamphetamine use

Scars from infected injection sites are often referred to as “tracks”
Methamphetamine use leads to severe tooth decay

“Meth Mouth”
Opioids
Opioids

- Buprenorphine
- Codeine
- Heroin
- Hydrocodone
- Methadone
- Morphine
- Opium
- Oxycodone
- Thebaine
- Tramadol
Opium-derived or synthetic compounds that relieve pain, produce morphine-like addiction, or relieve symptoms during withdrawal from morphine addiction.

Intravenous, smoked, chased, intranasal, oral and intrarectal.
### Opioids: basic facts

<table>
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<th>Acute PSYCHOLOGICAL effects:</th>
<th>Acute PHYSIOLOGICAL effects:</th>
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<tbody>
<tr>
<td>• Euphoria</td>
<td>• Suppresses cough reflex</td>
</tr>
<tr>
<td>• Pain relief</td>
<td>• Histamine release</td>
</tr>
<tr>
<td>• Sense of well-being</td>
<td>• Warm flushing of the skin</td>
</tr>
<tr>
<td></td>
<td>• Dry mouth</td>
</tr>
<tr>
<td></td>
<td>• Drowsiness and lethargy</td>
</tr>
<tr>
<td></td>
<td>• Depression of the central nervous system (mental functioning clouded)</td>
</tr>
</tbody>
</table>
Withdrawal symptoms:

► Intensity of withdrawal varies with level and chronicity of use

► Cessation of opioids causes a rebound in functions depressed by chronic use

► Withdrawal symptoms usually start a few hours after the last dose*

► For short-acting opioids (e.g., heroin), major withdrawal symptoms peak between 24 to 48 hours after the last dose

► Acute symptoms subside over 3 to 7 days

► Ongoing symptoms may linger for weeks or months
Long-term effects of opioids

- Not easy reversible changes in the physical structure and physiology of the brain
- Fatal overdose
- Collapsed veins (intravenous)
- Infectious diseases (intravenous)
- Higher risk of HIV/AIDS and hepatitis
- Infection of the heart lining and valves
Long-term effects of opioids

- Pulmonary complications & pneumonia
- Respiratory problems
- Abscesses
- Liver disease
- Low birth weight and developmental delay
- Spontaneous abortion
- Cellulitis
Other drugs

- Barbiturates
- Benzodiazepines
- Club drugs (MDMA-ecstasy, GHB, poppers, etc.)
- Hallucinogens (LSD, mushrooms, PCP, ketamine)
- Hypnotics (quaaludes, mandrax)
- Inhalants
  - petroleum products, glue, paint, paint removers
  - aerosols, sprays, gases, amyl nitrite
- Khat (Catha edulis)
- Steroids
Think of the drugs that are consumed in your area and the way they are consumed both by youth and adults.
Addiction and the brain
Addiction is a brain disease that is chronic and relapsing in nature.
How brain works
How a neuron works
How neurons work
The reward system

Examples of natural rewards:

► Food
► Water
► Sex
► Nurturing
How the reward system works

- Prefrontal cortex
- Nucleus accumbens
- VTA
Let's think!

► How is addiction perceived in your country?

► What do you think should be done to educate people in your country about addiction?

► Do you think it is important to shift from a belief of „weakness“ to understanding addiction as a disease? Why?
Activating the system with drugs
The brain after drug use
Partial recovery

Partial recovery of brain dopamine transporters in methamphetamine (METH) user after protracted abstinence

Normal control  METH abuser (1 month detox)  METH abuser (24 months detox)
The brain after drug use

da = days abstinent
Let's discuss!

► How do changes in brain make it difficult for people to quit drugs?
► How drugs affect brain and behaviour? Can you refer to different types of drugs?
► Can you think of a case from your practice, which you could relate to a patient’s particular behaviour?
Why do people continue drug use?

After repeated drug use, “deciding” to use drugs is no longer voluntary because

DRUGS AFFECT THE BRAIN!
Any Questions
Wrap-up

- Why do people start drug use?
- What are the 3 main defining properties of drug addiction?
- What are the 3 important concepts in drug addiction?
- Why do people with drug use disorders require treatment?
Thank you for your time!

End of workshop 1