PSY3190 Addiction Studies

Week 1 – General introduction and drug policy

1. Define what is a drug and what is addiction using the current international guidelines

Definitions

- Drug: a chemical entity used non-medically, self-administered for its psychoactive effect.
→ Any substance that alters our physiology, mood, cognition, or behaviour but does not constitute a food or nutrient e.g. coffee is not a drug
→ Any substance taken with the intent to alter mood, cognition, or behaviour
- Psychoactive substance: a drug which has cognitive and/or behavioural effects
- Toxicity (intoxication): usually an immediate effect of the drug when the blood-level concentration rises rapidly
- Dependence: a delayed effect and potentially long-lasting (more long-term consequences). MDMA is not addictive
- Substance use: self-administration of a psychoactive substance
- Substance related disorders: patterns of use that meets DSM criteria (DSM 5) – tolerance, withdrawal, significant time spent in activities to obtain/use substance, interference with everyday activities, craving. Allows for sub-typing based on a continuum from mild to severe
- The worldwide illicit drug trade is estimated to be an $800 billion/year industry, making it larger than the annual gross domestic product of 90% of the world's countries.
- If an individuals drinking has resulted in their suffering social, physical, emotional or vocational consequences then they are said to have a AUD (alcohol-use disorder).
- Between 15 and 30% of patients seen by the typical primary care physician have an SUD, most physicians are still undertrained (or not trained) to recognise substance abusers.
- Physicians fail to enquire about SUDs → leads to under-diagnosis and under-treated.

Addiction

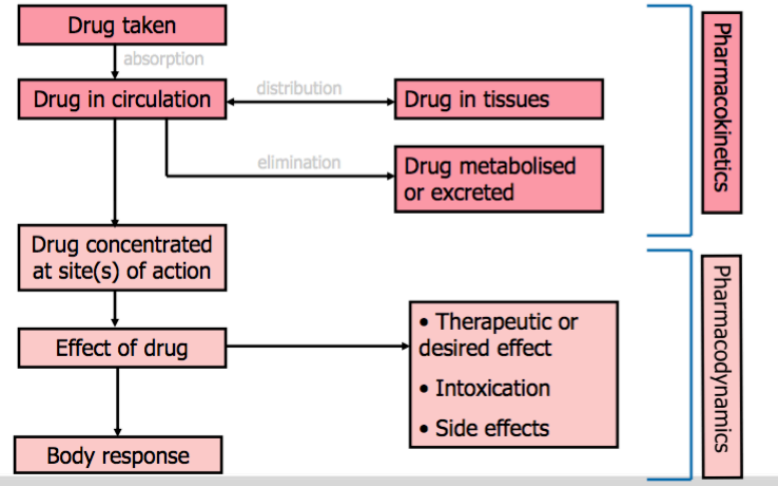
<u>ICD-10 Criteria:</u>

- Harmful use rather than abuse
- 3+ of the following present together during the previous year: a strong desire or sense of compulsion to take the substance AND difficulties in controlling substance-taking behaviour in terms of its onset, termination, or levels of use
- A physiological withdrawal state when substance use has ceased or has been reduced, evident from: The characteristic withdrawal syndrome for the substance; or use of the same (or closely related) substance with the intention of relieving or avoiding withdrawal symptoms
- Evidence of tolerance, such that increased doses of the psychoactive substance are required in order to achieve effects originally produced by lower doses
- Progressive neglect of alternative pleasures or interests because of psychoactive substance use, increases in the amount of time necessary to obtain or take the substance or to recover from its effects
- Persisting with substance use despite clear evidence of overtly harmful consequences, such as harm to the liver through excessive drinking, depressive

Week 2 – Pharmacology

1. Understand the different process implicated in pharmacokinetics and their implications for substance use disorders

- Effects of drug on our bodies vary according to: age, gender, body composition, health, route of administration, amount and frequency used, personality, mood, expectations, environment
- In order to achieve the prime effect of a compound, the user must endure the side effects of that compound as well. Some of the side effects will be relatively minor, whereas others might be life threatening.
- Pharmacokinetics: what the body does to the drug
- The importance of pharmacokinetics helps explain why most abused drugs (with the exception of alcohol) are injected, smoked, or snorted. These routes allow for a much faster delivery of the drug to the brain than when taken orally



Drug Administration – Pharmacokinetics

Oral ingestion – Enteral forms

- Dissolve in the fluids of the stomach and are carried to the intestine, where they are absorbed into the bloodstream
- Some drugs readily pass through the stomach wall (e.g. alcohol), and these take effect sooner because they do not have to reach the intestine to be absorbed.
- Others are broken down into inactive metabolites (breakdown products of the body's chemical reaction)
- Oral route = ease and safe, however is unpredictable because of difficult-to-gauge factors such as the amount of food in the stomach

Injection – Parental forms

- Effects are strong, fast, and predictable. Some loss of potency
- Made *sub-cutaneously* (SC), into the fatty tissue just beneath the skin; *intramuscularly (IM)*, into the large muscles; or *intravenously* (IV), directly into veins at points where they run beneath the skin – preferred as this goes directly to the brain.
- After intravenous injection, there is little or no opportunity to counteract the effects of an overdose, an impurity, or an allergic reaction. Develop scar tissue/infections

Inhalation

- Anaesthetics such as tobacco and marijuana
- Difficult to precisely regulate the dose and also causes lung damage