Chapter 16
Addictions

LEARNING OBJECTIVES

After reading and studying this chapter and participating in lecture and discussion, students should have an understanding of:

- Why people take drugs, and the nature of dependence.
- Factors leading to physical addiction (alcohol and opiate abuse) and psychological addiction (gambling and internet gaming disorders).
- The types of interventions used to treat each disorder, and their relative effectiveness.

CHAPTER OUTLINE

16.1 Drugs and drug dependence
16.2 Addiction: a common neurological pathway
16.3 Alcohol abuse disorder
- Aetiology of Alcohol Abuse Disorder
- Biological factors
- Socio-cultural factors
- Interventions in excess alcohol consumption
- The goals of therapy
- Withdrawal
- Drug therapies
- Psychosocial interventions
- Project MATCH

16.4 Heroin Use Disorder
- Aetiology of heroin use
- Biological factors
- Socio-cultural factors
- A biopsychosocial model
- Treatment of heroin use
- Harm minimization

Interventions to reduce/prevent use

16.5 Behavioural addictions

Gambling disorder

Aetiology of Gambling Disorder

Biological factors

Socio-cultural factors

Psychological factors

Treatment of pathological gambling

Pharmacological therapies

Psychological therapies

(Internet) Gaming Disorder

Aetiology of Gaming Disorder

Treatment of Faming Disorder

QUESTIONS FOR DISCUSSION

These may be useful to use at the beginning of the teaching session to get a sense of where people lie on these issues, to spark some interest in them, and as a link to refer to as the lecture progresses.

1. Which of the following is *not* a DSM diagnostic criterion of substance abuse disorder?
    a. Taking the substance in larger amounts and/or over a longer period than intended.
    b. Craving or strong urges to use the substance.
    c. Recurring failures to fulfil major role obligations at work, school, or home.
    d. They are all required for a diagnosis

2. What of the following does not form part of a common pathway of addiction?
    a. Dopamine activity within the nucleus accumbens
    b. Noradrenergic activity within the ‘pleasure centre’
    c. Pre-frontal activation in planning engagement in addictive behaviours
    d. Reductions baseline neurotransmitter levels associated with well-being

3. Which of the following is the optimal form of therapy for alcohol dependency according to Project MATCH?
    a. Cognitive Behavioural Therapy
    b. Alcoholics Anonymous

c. Motivational enhancement therapy
d. None is consistently superior

4. Which of the following is not a treatment approach for people addicted to heroin?
a. Nifuradone
b. Naltrexone
c. Methadone

5. Which of the following neurological responses form a risk factor in Sharpe's (2002) model of gambling addiction?
a. A biological vulnerability involving the dopaminergic and serotonergic systems
b. A biological vulnerability involving the dopaminergic and noradrenergic systems
c. A biological vulnerability involving the noradrenergic and serotonergic systems
d. None of the above

LECTURE SUGGESTIONS

The chapter/lectures address a range of addictions both to substances such as heroin and alcohol and activities such as gambling and gaming. Despite these differences, however, the core neurological underpinnings are common to all disorders and occur in distinct phases: (i) activation of the brain reward system as a function of engaging in the substance use/behaviour, primarily through dopaminergic activity in the 'reward system', (ii) the development of anticipatory activation of the reward system, (iii) the presence of withdrawal effects if unable to engage in the addicted behaviour, and (iv) following cessation of the activity, a process of pre-occupation, anticipation, and planning of future engagement with the addicted substance/behaviour. In the light of this common set of neurological underpinnings, it should be no surprise that genetics factor when considering the risk of developing a number of addictions (what might be called an addictive personality).

Critical issues: *alcohol addiction* tends to be a consequence of a drift from social drinking to more dependent drinking. There may be no 'critical incidents', rather a tendency to drink more over time until a degree of dependence is developed. Alcohol over this time, may be used as a social vehicle, a means of coping with stress, and moderating emotions. There is a divide in the treatment literature between goals of abstinence (e.g. Alcoholics Anonymous) and controlled drinking (e.g. CBT). At times this divide has reflected strongly opposing philosophies of causality and treatment approach. However, now the difference may simply be practical: the higher the amount drunk and the higher the level of dependence, the more likely it is that abstinence will be a necessary goal. That said, Project MATCH found most interventions are equally effective.

Addiction to heroin can be difficult to treat, and in the US in particular may be the result of withdrawal of 'legitimate' opiate treatment of chronic conditions in which pain is a key symptom. This has turned into a medical emergency, with dramatic increases in use of heroin by people unable to afford alternative legitimate medicines. The 'incentive sensitization model' of heroin addiction mirrors the more generic model already outlined. Interventions such as the provision

of methadone and needle exchanges are aimed at minimizing harm prior to withdrawal, or while continuing to use intravenous drugs respectively. Long term outcomes of treatment are modest and formal interventions such as CBT have proven difficult to initiate and maintain due to the chaotic lives of many of those with opiate addiction. Operant based rewards for abstinence may be of benefit, and opiate antagonists also of benefit, but only among those motivated to use them properly.

Levels of gambling may be influenced by a range of factors including the ease of access (the internet) and the immediacy of the reward (e.g. gaming machines) which means gambling addiction can be addressed at a societal/strategic level as much as at an individual level. The mechanisms of addiction are much the same as in physical addictions, and therefore the treatment approaches appear also to be the same, although CBT and other psychological interventions may prove more effective than in opiate and alcohol addiction. Finally, the newer condition of gaming disorder, while not yet being adopted by DSM 5 has been acknowledged by the WHO and is impacting people younger than the other addictions. Once established, it appears to become reasonably chronic and clearly contributes to a number of social, economic and psychological problems of those with the addiction. As with gambling, the process of addiction is acceleratory and begins with a shift to increasing use and dependency on gaming. Unsurprisingly, the mechanisms are similar to that of gambling and involve both neurological and cognitive processes.

CLASSROOM ACTIVITIES

Small group discussion: Some have argued that many of the problems associated with 'illegal' drug use exist because they *are* 'illegal'. What are the pros and cons of legalising so-called soft drugs such as marijuana and harder drugs such as heroin (as in the case of Switzerland)?

Small group discussion: Should we ban online betting? Is it possible to minimise the negative consequences of online betting for people who engage in excess gambling? Or, should we leave the sector unregulated as the majority of people gamble safely, and should be a priority.

Small group discussion: What would be your favoured psychological intervention for people who are addicted to heroin, and why?