

Substance Use Disorders



165. KANNABIS EMEROS. Cannabis sativa
Hemp

Cannabis [some call it Cannabium, some Schoenostrophon, some Asterion, ye Romans Cannabis] is a plant of much use in this life for ye twittings of very strong ropes, it bears leaves like to the Ash, of a bad scent, long stalks, empty, a round seed, which being eaten of much doth quench gonisture, but being juiced when it is green is good for the pains of the ears.



Leading public health bodies call for decriminalisation of drugs

Report from Royal Society for Public Health and Faculty of Public Health says misuse of drugs should be a health issue, not a criminal one



LSD & Psychedelic Therapy

- https://www.youtube.com/watch?v=LcUI0C_8hB4
- <https://www.theguardian.com/society/2018/dec/06/lsd-guides-psychedelic-assisted-psychotherapy>

Problems associated with regular substance use

- Many drugs have short-term benefits but long-term negative physical and psychological effects
- Regular drug use can blight social, educational and occupational functioning
- Significant burden to NHS services (e.g. car accidents, overdosing, cancer, binge drinking)

Defining Substance Use Disorders

- Addiction
- Substance abuse and dependency
- Tolerance
- Withdrawal
- Substance abuse

DSM-5 Criteria for Substance Use Disorder

Problematic pattern of use that impairs functioning. Two or more symptoms within a 1-year period:

- Failure to meet obligations
- Repeated use in situations where it is physically dangerous
- Repeated relationship problems
- Continued use despite problems caused by the substance
- Tolerance
- Withdrawal

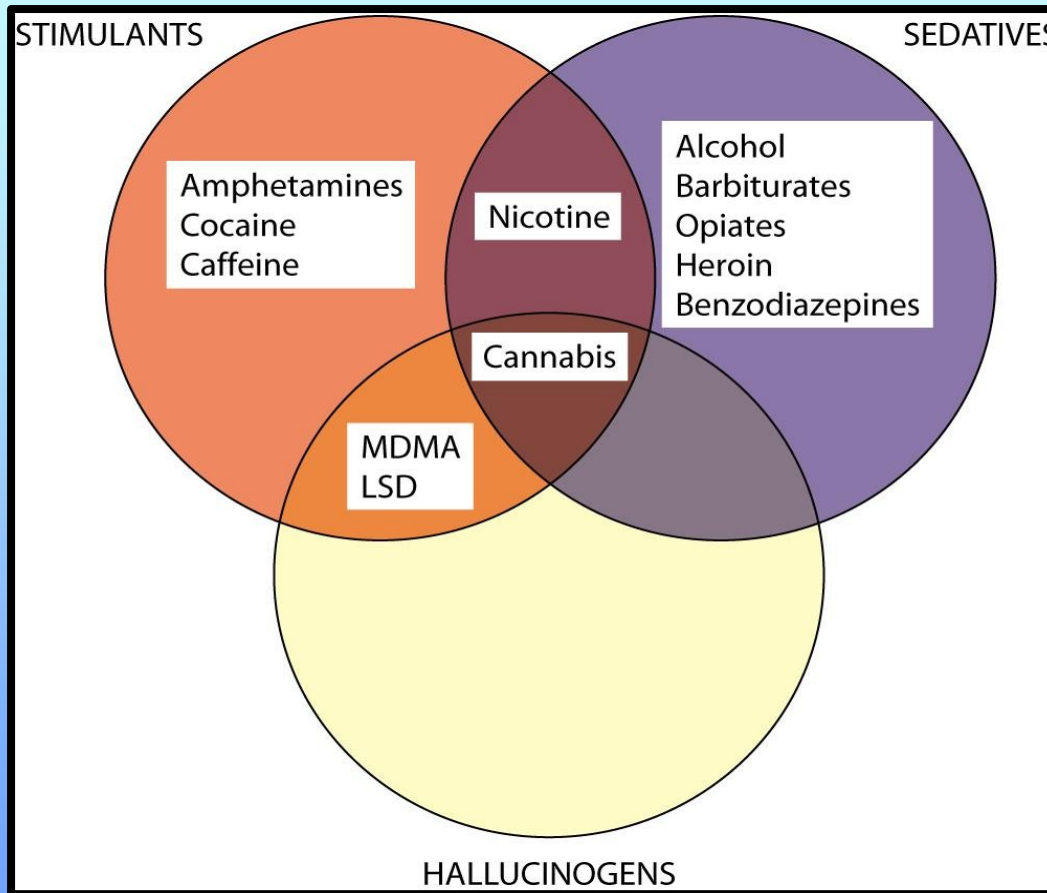
DSM-5 Criteria for Substance Use Disorder

- Substance taken for a longer time or in greater amounts than intended
- Efforts to reduce or control use do not work
- Much time spent trying to obtain the substance
- Social, hobbies, or work activities given up or reduced
- Craving to use the substance is strong

Comorbidity of substance use disorders

Psychiatric Disorder	% of individuals also diagnosed with a substance use disorder (SUD)
Bipolar Disorder	60.7%
Major Depression	18%
Obsessive-Compulsive Disorder (OCD)	32.8%
Panic Disorder	35.8%
Schizophrenia	47%
Bulimia Nervosa	28%
Personality Disorders	42%

Substance overlap between categories



Specific substance use disorders

- Alcohol
- Tobacco
- Cannabis
- Stimulant use
- Sedative use
- Hallucinogens

Adult drinking habits in Great Britain: 2005 to 2016 (Main points):

- In Great Britain, 56.9% of Opinions and Lifestyle Survey respondents aged 16 years and over in 2016 drank alcohol, which equates to 29 million people in the population.
- 7.8 million people “binged” on alcohol on their heaviest drinking day.
- Young people aged 16 to 24 years in Great Britain are less likely to drink than any other age group; when they do drink, consumption on their heaviest drinking day tends to be higher than other ages.

Adult drinking habits in Great Britain: 2005 to 2016 (Main points):

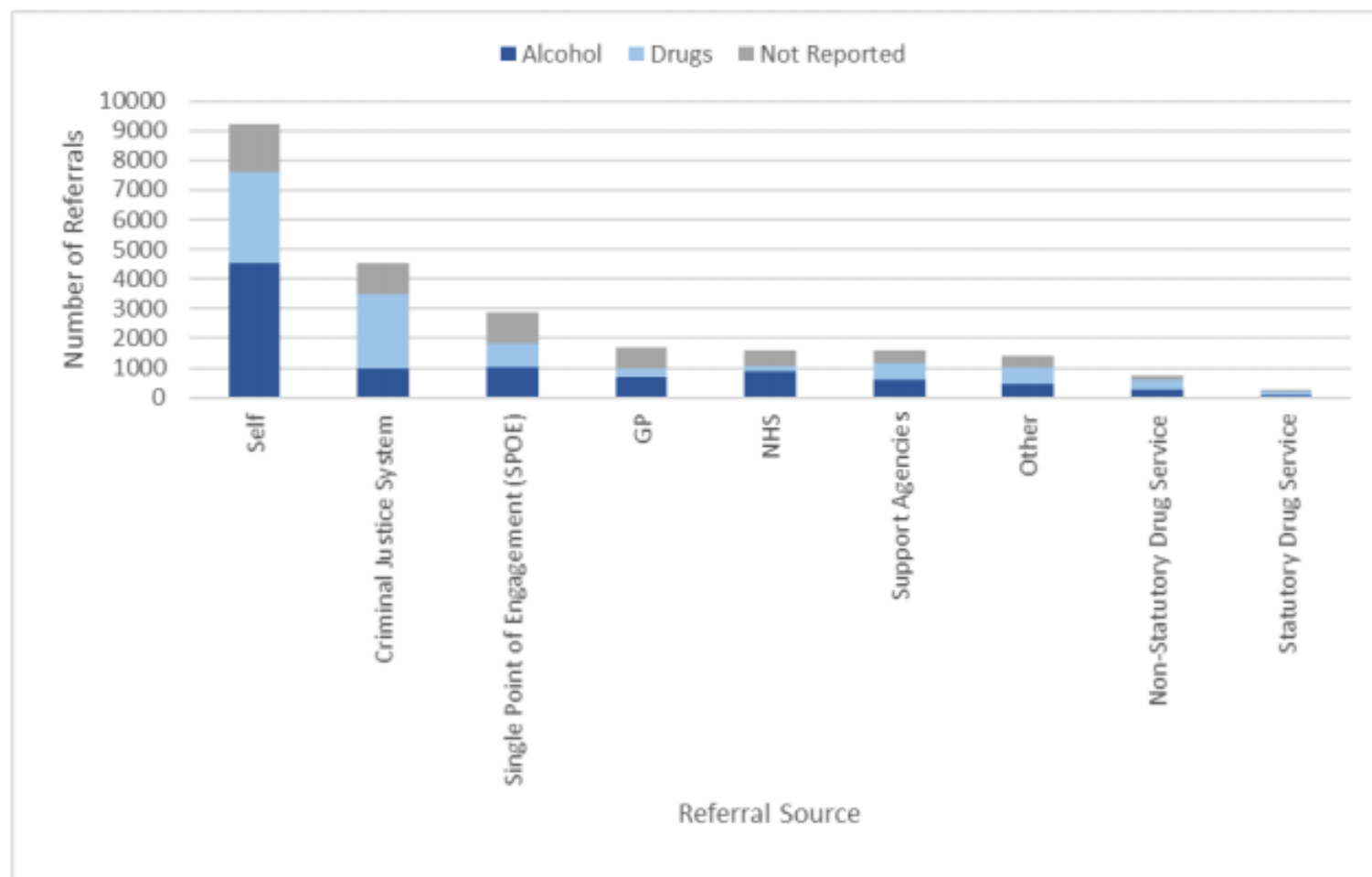
- The highest earners, those earning £40,000 and above annually, are more likely to be frequent drinkers and “binge” on their heaviest drinking day when compared with the lowest earners.
- In 2016, similar patterns of drinking were observed in England, Scotland and Wales; of the English regions, binge drinking was more common in the north.
- Among men who “binged”, normal strength beer was the most popular choice of alcohol, for females wine was the most popular choice.

Table 6:3 Referral activity by Ethnic Origin

	Referral Year									
	2012-13		2013-14		2014-15		2015-16		2016-17	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
White	19,005	78.1	19,687	80.4	23,239	82.2	20,146	82.5	20,589	86.3
White and Black Caribbean	44	0.2	66	0.3	40	0.1	45	0.2	37	0.2
White and Black African	14	0.1	17	0.1	22	0.1	11	0.0	17	0.1
White and Asian	19	0.1	17	0.1	23	0.1	21	0.1	24	0.1
Any Other Mixed Background	83	0.3	110	0.4	92	0.3	87	0.4	90	0.4
Indian	28	0.1	25	0.1	29	0.1	16	0.1	28	0.1
Pakistani	30	0.1	43	0.2	45	0.2	28	0.1	39	0.2
Bangladeshi	30	0.1	29	0.1	30	0.1	16	0.1	25	0.1
Any Other Asian Background	34	0.1	34	0.1	55	0.2	53	0.2	72	0.3
Caribbean	35	0.1	56	0.2	27	0.1	30	0.1	32	0.1
African	39	0.2	64	0.3	31	0.1	47	0.2	39	0.2
Any Other Black Background	32	0.1	40	0.2	74	0.3	61	0.2	60	0.3
Other ethnic group (a)	36	0.1	31	0.1	40	0.1	50	0.2	40	0.2
Client not stated (b)	4,901	20.1	4,280	17.5	4,504	15.9	3,797	15.6	2,756	11.6
Unknown (c)	1	0.0	0	0.0	4	0.0	0	0.0	0	0.0
Total	24,331	100	24,499	100	28,255	100	24,408	100	23,848	100

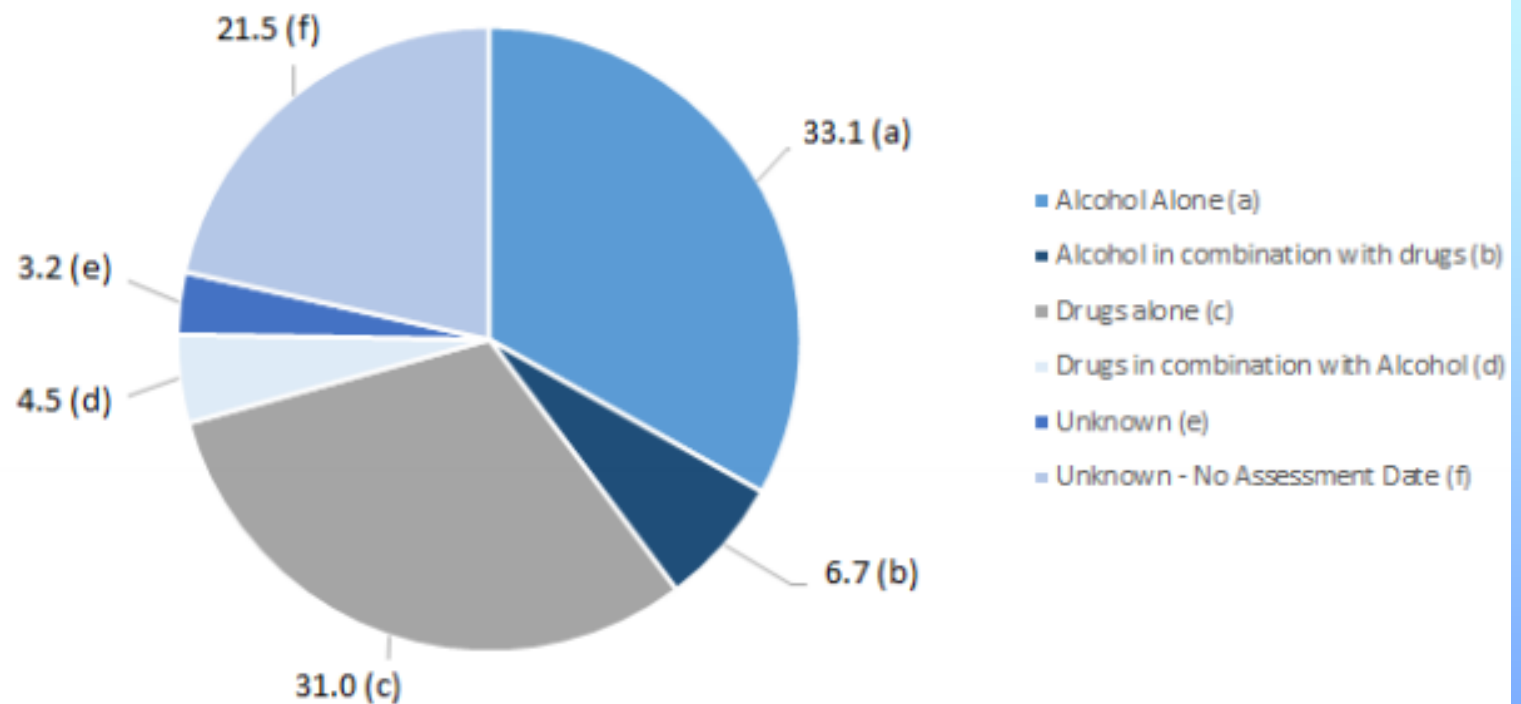
Source: WNDSM, NHS Wales Informatics Service

Chart 6.2: Source of referrals in 2016-17 by main problematic substance



Source: WNDMS, NHS Wales Informatics Service

Chart 6.3: Referrals in 2016-17 by main problematic substance



Source: WNDMS, NHS Wales Informatics Service

Alcohol use disorder

- 26% UK population could be labelled as *hazardous drinkers*
 - Individuals who have 5 or more standard drinks (males) or 3 or more standard drinks (females) on a typical drinking day
 - Binge drinking is also of concern (young people)

The physical effects of alcohol

- Main constituent is ethyl alcohol which is absorbed into the bloodstream
- Initially acts to relax by affecting the neurotransmitter GABA
- Second stage of intoxication includes inability to make judgements
- The final physical effects include motor coordination difficulties and slowed reactions

R: It is like [silence] when you take the first sip, it's good and it feels nice, you're funny, it is all cool and brilliant and then, there's the point when you're just trying to maintain that initial state, cause after the first few sips, you know, never, never, it is going to be experienced the same, I've always been the one, who stayed up, trying to maintain that feeling, the initial feeling...I was the one that stayed there trying to keep it going, trying to keep the party alive, it was sad, towards the end of it, it became sad cause I knew I had to finish, cause I was running out of money and drugs or buzz, and you know that feeling of impending doom like it is going to be over soon, it's going to run out, I'll have to go home...It was always the same, thrill and excitement, trying to maintain that feeling of excitement to depression and loneliness of finishing.

I liked to set myself, like what they call it, fire water, and you know why they call it fire water, because when I drank whisky, it burned, it used to go down burning, I used to drink it straight and I loved the feeling of it burning. It was like, setting myself on fire almost.

I had a quarter of whisky on my way to work. Then during work, I had, between 10 and 12 another quarter of whisky. Then I had a couple of beers, and then, after lunch, between one and five, I had another quarter of whisky. So, I'll keep drinking another bottle of whisky at work, and, you know I didn't want to stop, I didn't see the problem with that. I did not sleep at all, and everyday it was the same, but I didn't see a problem with it, it was normal for me to drink and I wanted to.

Wake up, six or seven am, throw up, and then walk to the off licence, buy a quarter of whisky and drink it, just to feel normal, everyday it was the same...I kind of knew something was wrong but, I don't know, it's the illness that is cunning and powerful...I can't explain it. My dad used to come into my room and swear at me, fuck, what you have done, why don't you stop drinking, why can, why don't you just drink beer, why you keep drinking whisky, and, and I really didn't have an answer...I was, I'm going to stop, I'll stop tomorrow. But tomorrow never came...I always thought that I can stop tomorrow.

Effects of alcohol on physical & psychological health

- Withdrawal symptoms
- Delirium tremens (DTs)
- Korsakoff's syndrome
- Foetal alcohol syndrome

Withdrawal symptoms

- The long-term physical effects of heavy alcohol consumption include withdrawal symptoms when the body is deprived of alcohol.
- These include
 - Restlessness
 - Inability to sleep
 - Anxiety and depression
 - Muscle tremors
 - Rises in blood pressure and temperature

Delirium Tremens (DTs)

The effects of withdrawal after extended heavy drinking over a number of years where the drinker may become delirious, experiences unpleasant hallucinations, and exhibits shaking and muscle tremors.

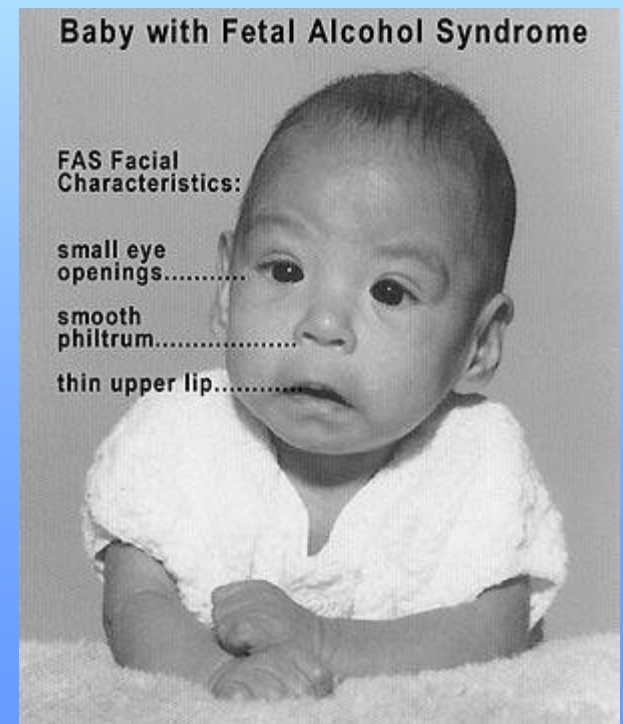
Korsakoff's syndrome

- A syndrome involving dementia and memory disorders which is caused by long-term alcohol abuse and dependency
- Can be the result of vitamin and mineral deficiencies caused by the long term excessive intake of alcohol which contains calories but is entirely devoid of nutrients

Foetal alcohol syndrome

- Where heavy drinking by a mother during pregnancy can cause a whole range of physical and psychological abnormalities in the child, including:

- Physical deformities
- Heart problems
- Stunted growth
- Hyperactivity
- Learning difficulties



The course of alcohol disorders

- Heavy & regular drinking
- Alcohol abuse
- Alcohol dependency disorder

Risk factors for alcohol use disorders

- A family history of alcoholism
- Long-term negative affect
- A diagnosis of childhood conduct disorder
- Experiencing life stress and childhood life stressors
- Holding beliefs that alcohol has favourable outcomes

The costs of alcohol use disorders

- Costs of alcohol-related crime and public disorder in the UK estimated at £1.5 billion per annum
- Accidents and crime are the two biggest social problems associated with alcohol misuse
- Per capita alcohol consumption predicts
 - Mortality from liver cirrhosis
 - Mortality from accidents and homicide
 - Death from suicide

Cannabis use disorder

- Is derived from the hemp plant
- Derivatives known as hashish and marijuana
- Normally smoked in a cigarette known as a 'joint'
- Causes relaxation (at low doses), euphoria, sociability, sharpened perceptions and mild hallucinations
- Active ingredient in cannabis is THC (Δ^9 -tetrahydrocannabinol)



Prevalence of cannabis use

- Estimated that 2.5% of the world's adult population use cannabis at least once a year (WHO,2006)
- In 2010, prevalence rate highest in Oceania at 9.1-14.6%
- In the UK, cannabis used regularly by around 2-5 million people

Cannabis use disorder

- Cannabis can cause tolerance effects
- In heavy users dependency is indicated by withdrawal symptoms which include flu-like symptoms, restlessness and irritability
- Cannabis dependency is observed when the user spends much of his or her day acquiring and smoking the drug
- Cannabis use is characterized by signs of cannabis intoxication
- Intoxication symptoms include impaired motor coordination, euphoria, anxiety, sensations of slowed time, impaired judgement

Risk factors for cannabis dependency

- Early first use of cannabis
- Tobacco smoking
- Impulsiveness and unpredictable moods
- A diagnosis of conduct disorder during childhood
- Dependency on alcohol and other drugs

Cannabis dependency as a risk factor for other psychopathologies

- Cannabis dependency is a risk factor for:
 - Anxiety & panic disorder
 - Major depression
 - Suicide
 - Schizophrenia
 - Evidence indicates a causal link between cannabis use and subsequent psychotic symptoms

The costs of cannabis dependency

- May be causally associated with a range of psychiatric symptoms
- Usage impairs a range of motor skills (e.g. making driving risky)
- Causes cognitive deficits while the user is under the influence of the drug
- Heavy regular users have lower educational achievement and lower income than non-users
- Only modest evidence that cannabis use causes long-term health problems

Stimulant use disorders

- Increase central nervous system activity & increase blood pressure and heart rate
- Facilitate alertness & provide feelings of energy and confidence
- Stimulant drugs include:
 - Cocaine
 - Amphetamines
 - Caffeine



Opiates

- Opiates consist of opium – taken from the sap of the opium poppy – and its derivatives
- Increases endorphin production
- Derivatives include:
 - Morphine
 - Heroin
 - Codeine
 - Methadone
- Heroin is currently the most widely used of the opiates



Prevalence of opiate use

- 13-21 million people worldwide take opiates (WHO, 2010)
- In 2009-10, there was an estimated 306,000 adult opiate or crack cocaine users in England (National Treatment Agency for Substance Misuse, 2011)

Opiate use disorder

- Tolerance builds up rapidly and so users soon begin the experience severe withdrawal effects
- Withdrawal symptoms include anxiety, restlessness, muscle aches, increased sensitivity to pain, and renewed craving for the drug
- Opiate dependency is indicated by compulsive, prolonged administration
- However, some users can control use and have been labelled controlled drug users or unobtrusive heroin users (Shewan & Delgarno, 2005)

The costs of opiate dependency

- Opiate dependency is associated with:
 - The risk of accidental overdose
 - Using street heroin that contains lethal additives
 - The risk of contracting HIV or hepatitis from needle sharing
- In a long term study of US heroin addicts, 28% had died before the age of 40 years (Hser et al., 1993)

The aetiology of substance abuse & dependency

- The aetiology of substance dependency has to be viewed in developmental terms
- Most individuals who become substance dependent go through three developmental stages:
 - Experimentation
 - Regular use
 - Abuse & dependency

The aetiology of substance abuse & dependency

- Experimentation
 - Availability
 - Familial Factors
 - Peer Group Influences
 - Media Influences
- Regular Use
 - Mood-Alteration Effects
 - Self-Medication
 - Long-Term Expectations & Beliefs
 - Cultural Variables
- Abuse & Dependency
 - Genetic Predisposition
 - Long-Term Cognitive Deficits
 - Concurrent Psychiatric Diagnoses
 - Poverty

Experimentation - Availability

- Availability of a drug or substance will influence time of first use
- There is an inverse relationship between first use of a drug and its cost (Stead & Lancaster, 2005)

Familial factors

- Early substance use is determined by:
 - Whether the substance is regularly used by other family members
 - Whether the family environment is problematic
- Neglectful parenting increases early use of alcohol, cigarettes and cannabis

Peer group influences

- Adolescents will start using a drug to self-categorize themselves as a member of a particular group
- Once an individual becomes a regular user, this will also influence the social groups that they will mix with

Media influences

- Substance use in young adolescents is significantly affected by advertising and exposure to the product in media contexts
- Banning advertising of a product (e.g. cigarettes) has been shown to significantly decrease adolescent use

Regular use

- Mood-alteration effects
- Self-medication
- Long-term expectations & beliefs
- Cultural variables

Mood-alteration effects

- Impact on reward pathways
- One main reason for using drugs is that they have important mood-altering effects
- Most drugs of abuse either relieve negative mood or create euphoria and feelings of well-being
- However, these mood-altering effects are more complicated than they may appear to the user (e.g. alcohol myopia)

Self-medication

- When individuals are suffering more severe adjustment and coping problems, substance use can act as a means of self-medication
- Supported by the fact that substance abuse and dependency are highly comorbid with other psychiatric disorders
- Anxiety disorders and depression tend to pre-date substance use disorders
- Substance abusers frequently cite self-medication as a reason for using drugs

Long-term expectations & beliefs

- Many substance users develop expectations that the substance will have positive effects
- Many substance users also develop erroneous beliefs that the substance they use is harmless

Cultural context

- Cultural differences in frequency of drug use may mediate the transition from first use to regular use (e.g. alcohol consumption in wine-drinking societies)
- There are also cultural differences in beliefs about the effects of drugs

Abuse & dependence

- Genetic predisposition
- Long-term substance-induced cognitive deficits
- Concurrent psychiatric diagnoses
- Poverty

Genetic predisposition

- A number of genetic factors may make individuals prone to substance abuse and dependency
- Twin studies suggest inherited factors in cannabis abuse, nicotine dependency, and drug abuse generally
- Genetic factors may interact with environmental factors to cause dependency (e.g. alcohol dependency)
- Inheritance of specific genes may influence substance dependency by influencing the physiological experience of the drug (e.g. Wall et al., 2001)

Long-term substance-induced cognitive deficits

- Regular use of some drugs may cause long-term cognitive and behavioural deficits
- Long-term deficits may adversely affect judgment resulting in continued long-term substance abuse
- Some neuropsychological evidence that drugs such as cocaine can cause long-term damage to the brains of regular users

Concurrent psychiatric diagnoses

- Treatment outcomes for substance abuse and dependency are significantly worse in those with concurrent psychiatric disorders
- Those with psychiatric diagnoses:
 - May face more stressors than those without (so causing more substance abuse)
 - Are less likely to consider drugs problematic or may lack the motivation to abstain

Poverty

- Socioeconomic factors are important in determining whether someone will use drugs
- Conditions such as unemployment, no other forms of recreation, little hope of educational fulfilment, and environments that revere drug dealing as a high-status profession are all likely to influence continued substance abuse

The treatment of substance abuse & dependency

- Community-based programmes
- Behavioural therapies
 - Aversion therapy
 - Contingency management therapy
- Cognitive behavioural therapies (CBT)
- Family & couples therapy
- Biological treatments

Difficulties associated with treatment

- Clients are usually physically and psychologically addicted to a drug
- Clients may experience severe withdrawal symptoms when they abstain
- They will usually mix in social circles where drug use is prevalent
- Co-morbid psychiatric problems may make treatment difficult
- Many may not see their drug taking as problematic
- Many may be homeless or living in poverty

Community-based programmes

- Self-help groups (e.g. AA)
- Drug prevention schemes
- Residential rehabilitation centres

Self-help groups

Self-help groups:

Group therapy which brings together people who share a common problem in an attempt to share information and help and support one Another (e.g. Alcoholics Anonymous, Narcotics Anonymous)

Drug-prevention schemes

Drug-prevention schemes: Community based services whose purpose is to try to prevent first use of a drug or to prevent experimentation with a drug developing into regular use – usually through information about the effects of drugs and through developing communication and peer-education skills.

Residential rehabilitation centres

Residential rehabilitation centres:

Centres which allow people to live, work and socialize with others undergoing treatment in an environment that offers advice, immediate support, and group and individual treatment programmes enabling clients to learn the social and coping skills necessary for the transition back to a normal life.

Behavioural therapies

- Behavioural therapies have a number of aims:
 - To change substance use from positive to negative
 - To help the individual identify stimuli that control substance use
 - To reinforce abstinence
 - To teach users alternative behaviours to substance use and abuse

Aversion therapy

- An aversive form of classical conditioning.
- For example, in treatment for substance dependency, clients are given their drug (the conditioned stimulus) followed immediately by another drug (the aversive unconditioned stimulus) that causes unpleasant physiological reactions such as nausea and sickness.

Contingency management therapy

- Teaches the client how to restructure and control their behaviour and environment in order to prevent drug use
- Controlled drinking is an example
- Based on conditioning principles:
 - Client learns to identify environmental triggers
 - Using rewards to reinforce abstinence
 - Learning to be aware of when and how frequently drug taking occurs
 - Setting attainable goals in a structured step-by-step approach

Cognitive Behavioural Therapies (CBT)

- CBT for substance abuse and dependency provides:
- Help in dealing with dysfunctional beliefs about relapse (abstinence violation beliefs)
- Help in coping with stressful situations in which the client would normally use drugs
- Help in dealing with negative emotions (known as motivational-enhancement training, MET)

Family & couples therapy

- Many drug abusers live with their families who can provide support on a day-to-day basis
- Family members may constitute part of the problem (e.g. being drug users themselves)
- Particularly successful in dealing with adolescent drug problems (Waldron et al., 2001)

Biological treatments

- Detoxification
- Methadone maintenance programmes
- Antabuse (disulfiram)
- Drug treatments:
 - Naltrexone
 - Naloxone
 - Buprenorphine
- Drug replacement treatment

Detoxification

- A process of systematic and supervised withdrawal from substance use that is either managed in a residential setting or on an outpatient basis.
- Methadone maintenance programme:
 - A detoxification programme where users take a less virulent opiate in order to wean themselves off heroin.
- Antabuse (disulfram):
 - Has been used for over 60 years in the detoxification of individuals with alcohol dependency
 - Abstinence rates of 50% are achievable up to 9 years after treatment

Drug treatments

- Many drugs have been developed to influence the brain neurotransmitters and prevent the neurophysiological effects of stimulants, opiates and hallucinogens
- These include naltrexone, naloxone and buprenorphine
- Are effective in reducing craving and may be combined with other forms of treatment

Drug replacement treatment

- Involves treating severe cases of substance abuse and dependency by substituting a drug that has lesser damaging effects
- Largely confined to treating opiate dependency
- Attempts to develop substitute drugs for other dependencies:
 - Sativex, an aerosol that combines THC and non-psychoactive cannabis ingredients for the treatment of cannabis dependency