
UNIT 1 ALCOHOLISM

Structure

- 1.0 Introduction
- 1.1 Objective
- 1.2 Addiction and Dependence
- 1.3 Classification of Dependence Syndrome
- 1.4 Dual Diagnosis of Alcohol Abuse and Dependence
- 1.5 Consequences of Alcohol Abuse and Dependence
- 1.6 Etiology of Alcohol Abuse and Dependence
- 1.7 Assessment of Alcohol Abuse and Dependence
- 1.8 Treatment of Alcohol Problems
 - 1.8.1 Psychological Approaches
 - 1.8.2 Pharmacotherapy
 - 1.8.3 Preventing Relapse
- 1.9 Let Us Sum Up
- 1.10 Answers to Self Assessment Questions
- 1.11 Unit End Questions
- 1.12 Suggested Readings and References

1.0 INTRODUCTION

Alcohol is one of the oldest drugs known to man. It has been an important part of world cuisines and a consistent feature on occasions ranging from celebrations to funerals across cultures. Yet, there have always been those who have been unable to restrict their use of alcohol and have suffered grievous consequences as a result. These persons are often referred to as ‘alcoholics’ in lay terms. The concept of alcoholism is best understood in the context of ‘addiction’. The term *addiction* usually conjures up images of alcoholics and other drug addicts who manifest physical and/or psychological need for chemical substances. Such individuals rely on substances to function or feel good (psychological dependence). When their bodies reach a state of biological adjustment to the chronic presence of a chemical substance (physical dependence), they require increasing amounts to achieve the desired effect (tolerance). When denied access to their chemical elixirs, their bodies experience adverse effects (withdrawal), typically the opposite bodily effects as those sought. In this Unit, you will understand about the diagnosis, consequences, etiology and treatment for alcoholism.

1.1 OBJECTIVES

After studying this Unit, you will be able to:

- differentiate between addiction and dependence;
- describe classification of dependence syndrome;
- explain dual diagnosis of alcohol use disorder;

- describe the consequences of alcohol misuse;
- explain the etiology related to alcohol abuse and dependence;
- understand the effects of alcohol withdrawal syndrome;
- know the screening for alcohol problem and tool for assessment of dependence; and
- discuss the treatment and management of alcohol problem.

1.2 ADDICTION AND DEPENDENCE

Researchers and clinicians traditionally limit ‘addiction’ to alcohol and other drugs. Yet, *neuroadaptation*, the technical term for the biological processes of tolerance and withdrawal, also occurs when substance-free individuals become addicted to pathological gambling, pornography, eating, overwork, shopping, and other compulsive excesses (Coombs, 2004).

Recent scientific advances over the past decade indicate that addiction is a brain disease that develops over time as a result of initially voluntary behaviour. “The majority of the biomedical community now consider addiction, in its essence, to be a brain disease,” said Alan Leschner (2001), former Director of the National Institute on Drug Abuse (NIDA); “*a condition caused by persistent changes in brain structure and function.*”

Addiction is, thus, a disease in and of itself, characterized by compulsion, loss of control, and continued use in spite of adverse consequences (Coombs, 1997; Smith & Seymour, 2001).

The primary elements of addictive disease are **three Cs**:

- 1) **Compulsive use**: an irresistible impulse; repetitive ritualized acts and intrusive, ego-dystonic (i.e., ego alien) thoughts e.g. the person cannot start the day without a cigarette and/or a cup of coffee. Evening means a ritual martini, or two, or three. In and of itself, however, compulsive use doesn’t automatically mean addiction.
- 2) **Loss of Control**: the inability to limit or resist inner urges; once begun it is very difficult to quit, if not impossible, without outside help. This is the pivotal point in addiction. The individual swears that there will be no more episodes, that he or she will go to the party and have two beers. Instead, the person drinks until he or she experiences a blackout and swears the next morning to never do it again; only to repeat the behaviour the following night. The individual may be able to stop for a period of time, or control use for a period of time, but will always return to compulsive, out-of-control use.
- 3) **Continued use despite adverse consequences**: use of the substance continues in spite of increasing problems that may include declining health, such as liver impairment in the alcohol addict; embarrassment, humiliation, shame; or increasing family, financial, and legal problems.

Substance dependence is the term which formally replaced ‘addiction’ in medical terminology in 1964 when the World Health Organizations Expert Committee on Drug Abuse proposed that the terms addiction and habituation be replaced with the term dependence and distinguished between two types- psychological dependence and physical dependence. Psychological dependence refers to “the experience of impaired control over drug use” while physical dependence involves “the development of

tolerance and withdrawal symptoms upon cessation of use of the drug, as a consequence of the body's adaptation to the continued presence of a drug event" (UNIDCP, 1998).

Dependence conditions include Alcohol use disorders which often present as other psychiatric syndromes. The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), and the International Classification of Diseases, Tenth Revision (ICD-10) provide diagnostic criteria for the phenotypes "alcohol abuse" and "alcohol dependence." These two distinct categories have replaced the term "alcoholism," which was first discarded in DSM-III (National Institute on Alcohol Abuse and Alcoholism, 1995).

Alcohol consumption and alcohol dependence make a substantial contribution to the current global burden of disease and account for 4.6% of all global disability-adjusted life-years lost to illness (Rehm, Mathers & Popova, et al. 2009).

There are several alcohol dependence typologies. Two of the most popular ones along with their phenotypic characteristics are (Jellinek, 1960):

alpha: representing a purely psychological continued dependence without loss of control or inability to abstain

beta: physical complications without physical or psychological dependence

gamma: acquired tissue tolerance, adaptive cell metabolism, physical dependence and loss of control

delta: shares the first three features of gamma, but inability to abstain replaces loss of control

epsilon: dipsomania or periodic alcoholism

Cloninger et al. 1981; Sigvardsson et al. 1996 have distinguished between Type 1 and Type 2 alcoholism:

Type 1 alcoholism

- Age of onset over 25 years
- No criminality or treatment for alcohol problems in the biological parents
- Loss of control (or psychological dependence)
- Guilt and fear about dependence
- Harm avoidance
- Reward dependence

Type 2 alcoholism

- Teenage age of onset (under 25 years)
- Alcohol abuse, criminality and treatment are extensive in the biological father
- Inability to abstain
- Aggressive behaviour
- Novelty-seeking personality traits

1.3 CLASSIFICATION OF DEPENDENCE SYNDROME

There is high agreement for the dependence syndrome construct across the two diagnostic systems- Diagnostic and Statistical Manual- IV-TR (American Psychiatric Association, 2000) and International Classification of Diseases-10(World Health Organization, 1992). The ICD-10 includes a strong desire or sense of compulsion to use substances, impaired capacity to control substance use, a physiological withdrawal state with withdrawal relief and avoidance, tolerance, a preoccupation with substance use and persistent substance use despite clear evidence of harmful consequences. DSM-IV TR includes tolerance, withdrawal, a persistent desire for or unsuccessful effort to control substance use, substances taken in larger amounts or over longer periods than intended, time spent in obtaining substances, reduction in obligations and activities and continued use despite knowledge about harmful consequences. DSM-IV TR does not include craving or compulsion to take substances but concedes that craving (a strong subjective desire to use the substance) is likely to be experienced by most (if not all) individuals with substance dependence.

Diagnostic guidelines for Dependence Syndrome in ICD-10 (WHO, 1992)

A definite diagnosis of dependence should usually be made only if three or more of the following have been experienced or exhibited at some time during the previous year:

- a) A strong desire or sense of compulsion to take the substance;
- b) Difficulties in controlling substance-taking behaviour in terms of its onset, termination, or levels of use;
- c) A physiological withdrawal state when substance use has ceased or has been reduced, as evidenced by the characteristic withdrawal syndrome for the substance; or use of the same (or a closely related) substance with the intention of relieving or avoiding withdrawal symptoms;
- d) Evidence of tolerance, such that increased doses of the psychoactive substance are required in order to achieve effect originally produced by lower;
- e) Progressive neglect of alternative pleasures or interests because of psychoactive substance use, increased amount of time necessary to obtain or take the substance or to recover from its effects;
- f) Persisting with substance use despite clear evidence of overtly harmful consequence, such as harm to the liver through excessive drinking, depressive mood states consequent to periods of heavy substance use or drug related impairment of cognitive functioning; efforts should be made to determine that user was actually, or could be expected to be, aware of the nature of extent of the harm.

The ICD-10 has opted for the newer concept of “Harmful Use” to define those individuals who do not satisfy the definition of dependence syndrome and yet, do have problems due to substance use. Harmful Use has been described as “a pattern of psychoactive substance use that is causing damage to health, the diagnosis requiring that actual damage should have been caused to the mental or physical health of the user.

1.4 DUAL DIAGNOSIS OF ALCOHOL ABUSE AND DEPENDENCE

Drinking problems are complicated by a variety of concomitant problems. Of significance is the comorbidity of alcohol use disorders with other psychiatric diagnoses. A high percentage of those diagnosed with alcohol abuse or dependence also experience other psychological problems, which may be antecedent to, concurrent with, or consequent to their drinking. The most common Axis I disorders are other psychoactive substance use disorders, depression, and anxiety disorders, occurring in up to 60% of males in treatment. The most common Axis II disorder comorbid with alcoholism in males is antisocial personality disorder, with rates ranging from 15 to 50%. Females more often present with depressive disorders; 25 to 33% of women with alcoholism experience depression prior to the onset of their alcoholism (Rosenthal & Westreich, 1999).

Bipolar affective disorder poses a particular risk of alcohol misuse, as does schizophrenia, which is associated with patients being three times more likely to abuse alcohol than those without it. In general, comorbidity leads to more frequent recurrence of mental disorder, greater time spent in hospital and increased violence, homelessness and family disintegration. Some important clinical issues to emerge from these findings include that often substance use or misuse is not limited to one substance. Also, the distinction as to whether a psychiatric disorder preceded or is the result of substance use disorder can be difficult to make. It is important to recognise the role of early childhood psychiatric disorder and the likelihood that this might predispose to substance misuse in later life.

The terms *comorbidity*, *dual diagnosis* and *coexisting/co-occurring substance problems and psychological disorder* are used interchangeably. Comorbidity may present itself in a range of combinations and permutations, including the following:

- i) Substance use – even one dose – may lead to psychological symptoms or psychiatric syndromes.
- ii) Harmful use may produce psychiatric symptoms.
- iii) Dependence may produce psychological symptoms.
- iv) Intoxication by a substance may produce psychological symptoms.
- v) Withdrawal from substances may produce psychological symptoms.
- vi) Substance use may exacerbate a preexisting psychiatric disorder.
- vii) Psychological morbidity not amounting to a “disorder” may precipitate substance use.
- viii) Primary psychiatric disorder may lead to substance use disorder.
- ix) Primary psychiatric disorder may precipitate substance use disorder, which may in turn lead to psychiatric disorder.

Self Assessment Questions 1

- 1) Mention the primary elements of addictive disease.

.....

.....
.....
2) Distinguish between Type 1 and Type 2 Alcoholism.
.....
.....
.....
.....
.....
3) Dual diagnosis is also known as co-morbidity. True False

1.5 CONSEQUENCES OF ALCOHOL ABUSE AND DEPENDENCE

The physical complications of alcohol use are numerous. The health risks relate to the pharmacological effects of alcohol, withdrawal, toxicity and deficiency syndromes as a result of chronic abuse and from secondary effects such as domestic violence and injury resulting from drunk-driving offences. Psychological consequences of alcohol misuse are also severe.

i) **Effects on the central nervous system**

Alcohol acts as a blocker of messages transmitted between nerve cells in the central nervous system. There is no absolute threshold for blood alcohol concentrations below which there is no impairment of complex psychomotor skills. At blood alcohol concentrations (BAC) of 25 mg%, euphoria is apparent, lack of co-ordination occurs at levels of 50 to 100 mg% and unsteadiness, ataxia, poor judgement and labile mood are observed at 100 to 200 mg%. At 200 to 400 mg%, the drinker may be in a stage 1 anaesthetic state, with periods of amnesia. Intoxication can lead to death from coma and respiratory depression at 400 to 700 mg%. Acute intoxication with alcohol may result in coma or death resulting from CNS depression, leading to respiratory depression and cardiovascular collapse. Intoxicated patients are at an increased risk for other traumatic and medical pathologies that may precipitate or be exacerbated by head injury, infection or hypoglycaemia, which must be ruled out or appropriately treated. The effects of raised alcohol levels are modified by age, sex and degree of alcohol dependence; a high level of tolerance is indicated by high alcohol levels associated with low levels of apparent impairment.

ii) **Effects of alcohol withdrawal syndromes**

These may be precipitated by a variety of circumstances, including lack of money to purchase alcohol, acute illness or injury, nausea and vomiting or a decision to stop drinking. Alcohol withdrawal syndromes (AWS) can be classified by severity into mild, moderate or severe. In clinical practice, severity is often seen to present along a continuum from mild tremor through to delirium and convulsions.

Table 1: Alcohol withdrawal severity

Mild alcohol withdrawal	Occurs less than 24 hours after stopping or decreasing alcohol intake. It may include tremulousness, anxiety, nausea, vomiting, sweating, hyperreflexia and minor autonomic hyperactivity(sweating, tachycardia)
Moderate alcohol withdrawal	An intermediate position along the continuum with the hallmark of hallucinosis but an otherwise clear sensorium
Severe alcohol withdrawal	Occurs more than 24 hours and up to 5 days after stopping agitation, hallucinations and severe autonomic derangement. Seizures may also be secondary to intoxication or trauma or as a toxic effect of alcohol. It is characterized by disorientation.

iii) Neurological nutritional deficiency syndromes

The initial presentation of nutritional deficiency in alcohol abusers may be of peripheral neuropathy and cardiovascular disorder, for example, hypotension or high-output cardiac failure (e.g. beriberi) in combination with oral inflammation, and this is the result of thiamine deficiency. Pellagra (niacin and protein deficiency) and scurvy (vitamin C deficiency) are less common.

The most important presentation of nutritional deficiency is the Wernicke-Korsak off syndrome (WKS), which is consequent on thiamine deficiency. Wernicke's encephalopathy (WE) and Korsakoff's Psychosis (KP) are both part of this syndrome.

Alcoholic cerebellar degeneration presents as gross ataxia, and the pathology is that of cell loss. It may respond to thiamine in the early stages. Central pontine myelinolysis and Marchiafava-Bignami syndrome are rare conditions, results from demyelination.

iv) Liver disease and gastrointestinal disorder

The spectrum of liver disease is not uniform but can be described under three main headings: fatty liver, alcoholic hepatitis and cirrhosis. In reality, there is considerable overlap in the clinical setting. Alcoholic fatty liver results from the inhibition of oxidation of fatty acids combined with an increased in generation of triglycerides. The effects can be reversed within a few weeks of abstinence from alcohol. Fatty liver is generally asymptomatic and may in the early stages produce no changes in liver function tests other than those related to the direct effect of the alcohol on liver function. It may, however, present with right abdominal pain, nausea and vomiting, which resolve on abstinence. Alcoholic hepatitis and cirrhosis result from chronic alcohol abuse. Alcoholic hepatitis produces liver cell necrosis and inflammation. The clinical presentation is with jaundice, pyrexia, right abdominal pain, ascites and possible encephalopathy. In patients with poor liver function and a prothrombin time prolonged to a degree which precludes liver biopsy, the prognosis is poor, with a third of patients dying in the acute episode.

Severe acute alcoholic hepatitis has a poor outcome with standard supportive management. Cirrhosis involves a permanent loss of liver cells, which are replaced by fibrosis with loss of the normal liver architecture. It may be asymptomatic or present with gastrointestinal symptoms, ascites, encephalopathy and oesophageal varices, which may cause haemorrhage. Acute and chronic pancreatitis and gastritis and peptic ulcer are other gastrointestinal consequences of alcohol abuse.

v) **Cancer**

Chronic alcohol consumption is a strong risk factor for cancer in the oral cavity, pharynx, hypopharynx, larynx and oesophagus and is also a major aetiological factor in hepatocarcinogenesis. Alcohol also increases the risk for cancer of the colorectum and the breast.

vi) **Cardiovascular disease**

The effects of alcohol on the cardiovascular system are well documented and range from the protective effects of light drinking for ischemic stroke and coronary disease through to the increased risk from heavy drinking for haemorrhagic stroke, cardiomyopathy, hypertension and cardiac arrhythmias.

vii) **Reproductive disorders**

In premenopausal female alcoholics, there is an increase in the frequency of menstrual disturbances, abortions and miscarriages and infertility. Regular consumption of alcohol during pregnancy may affect the foetus. The abnormalities range from growth retardation to foetal alcohol syndrome (FAS). Children with FAS have reduced body weight and height, are hyperactive and have subnormal intelligence. Their faces may be recognized by short palpebral fissures, short upturned noses, mid facial hypoplasia, low nasal bridge and a thin upper lip.

Studies of male alcoholics have reported that alcohol consumption may affect spermatogenesis and spermiogenesis and cause reduced sperm counts.

viii) **Psychological and behavioural consequences**

Alcohol abuse and dependence leads to maladaptive behaviours in the individual and has negative effect on the interpersonal relationships. It hampers fulfilling the person's personal, family and social responsibilities. It also lowers the person's self esteem and confidence. Irritability, lack of motivation, depression, anxiety, aggressiveness characterize the individual.

The effects of heavy drinking can be insidious and debilitating. It affects the immediate family and the self in a negative way. Even though major medical conditions may not be present, many people eat poorly when drinking, which results in nutritional deficits, poor energy, or vague and diffuse physical discomfort. Long term effects of alcohol abuse can have serious consequences. Mortality rates among persons of all ages are elevated with alcohol dependence, and are higher among women than among men.

1.6 ETIOLOGY OF ALCOHOL ABUSE AND DEPENDENCE

Genetic factors : Genetics appear to have a major role on how the brain responds to and processes psychoactive substances (Smith & Seymour, 2001).

Familial transmission of alcohol consumption and dependence has been observed since antiquity (Devor & Cloninger, 1989). Formal genetic studies of different populations have revealed that genetic factors contribute an estimated 40–60% of the variance in liability to alcohol dependence (Lynskey, Agarwal & Heath, 2010; Kendler, Chen, Dick et al. 2012). Since family members share some of their genes as well as important aspects of their environment, adoption and twin studies are conducted to distinguish between environmental and genetic factors. Family and twin studies reveal that parental alcoholism is 6 times more likely and alcoholism is more common in twins, both mono

and dizygotic. Studies show that twin children living in foster homes tend to share abuse or abstinence patterns similar to their biologic parents' (Goodwin, 1976), and there is evidence that if both biological parents are alcoholic, the child is about 400% more likely to be alcoholic (Inaba & Cohen, 2000).

Longitudinal formal genetic studies have shown that the relative influence of genetic and environmental risk factors on AD and alcohol-related phenotypes fluctuates over time (Rose, Dick, Viken, et al. 2001; Dick., Pagan, Viken, et al. 2007; Kendler, Schmitt, Aggen, et al. 2008). Research has revealed alternation between periods in which genetic influences predominate and periods in which environmental influences are more dominant. A detailed longitudinal study by Kendler et al. (2008) showed that environmental influences on alcohol consumption were highest in adolescence. This finding suggests that adolescence may be the optimal time point for educational interventions.

Psychological Theories: A variety of theories relate to the use of alcohol to reduce tension, increase feelings of power, and decrease the effects of psychological pain.

Psychodynamic Theories: Psychoanalytic approach view the alcoholic as an oral dependent personality fixated at the oral stage of development. Lack of fulfillment of the basic need for oral gratification leads the person to become dependent on alcohol. This approach also advocates that some persons may use alcohol to help them deal with self-punitive harsh superegos as a way of decreasing unconscious stress levels. Wurmser (1984-85), for example, views the use of alcohol or drugs as an attempt to escape from intense feelings of rage and fear arising from severe intra-psychic conflict due to an overly harsh superego.

Behavioural Theories: Behavioural principles do go a long way toward explaining the addictive processes, even though chemically dependent people have varying personalities. For instance, *positive reinforcement*, something pleasurable happening after a behaviour occurs that makes repeating a behaviour more likely, can happen when people get high or when they feel relaxed and joyful while using substances. This may not happen every time that a person uses. A reinforcement that doesn't occur regularly is often referred to as being on a *variable* or *intermittent* (random or unpredictable) schedule. Behavioural researchers have determined that a variable reinforcement schedule produces behaviour patterns more difficult to change than behaviour patterns reinforced on a regular basis. This occurs because a person cannot predict which use will be rewarded, so, just like gambling, a person keeps using in hopes this will be the time he or she will hit the euphoric jackpot.

In the same way, using substances can be negatively reinforcing for a person. *Negative reinforcement* occurs when an activity removes an aversive event or consequence, therefore making it more likely that the behaviour will be repeated (just like positive reinforcement). Sometimes this involves lifting a punishment and other times it might involve removing nasty physical symptoms, such as drinking to beat a hangover or using to avoid the chills. Negative reinforcement also can occur on a variable or intermittent schedule, meaning that sometimes the use alleviates the nasty symptoms, but not always. Addiction can develop as a result of these powerful behaviour patterns (desiring pleasure and avoiding discomfort) reinforced in a random and unpredictable way. The compulsion to use may arise as a conscious choice to seek highs and avoid lows, but eventually, the behaviour takes on a life of its own as reinforcement becomes less predictable.

Reinforcement Schedules and Using Substances

Continuous reinforcement means that it occurs regularly after every use, which becomes less likely as tolerance develops.

Intermittent or variable reinforcement is more likely after tolerance develops, which occurs in a random and unpredictable fashion that keeps the person coming back for more.

Chemically dependent people likely are experiencing both intermittent positive and negative reinforcement, since the substance sometimes makes them high, takes away withdrawal, and self-medicates (but not always).

Self-medication also can be thought as negative reinforcement. The person may use the substance to relieve aversive psychiatric or physical symptoms, such as depression, anxiety, or chronic pain. More often than not, the substance use may actually make the symptoms worsen over the long term. However, since using had been negatively reinforced at times by relieving symptoms, the patient may continue the use of substances to self-medicate, even if the substances make the symptoms worse.

In the typical classical conditioning paradigm, the development or “learning” of drinking behaviour occurs through repeated pairings of: (1) a conditioned stimulus (CS), such as a particular person and an unconditioned stimulus (US), such as a particular location or time of day with (2) alcohol consumption. After repeated pairings, a conditioned response (CR) develops where exposure to the CS or US results in the CR (drinking behaviour). This model has been postulated to explain the initial development and maintenance of craving and conditioned tolerance (both conditioned responses), for alcohol as well as other drugs (Wikler, 1973; Siegel, 1983).

Social Learning Model : Social learning theories focus on cognitive constructs such as expectancies, self-efficacy, and attributions to mediate the pathway from stimuli to alcohol use as a response. Expectancies of the positive effects from using alcohol develop as conditioned cognitions from repeated classical or operant pairings of alcohol use with a positive experience (i.e., reinforcement). Self-efficacy refers to the expectation by individuals that they can successfully perform a particular coping behaviour in certain situations and that the behaviour will be reinforced. The Social Learning viewpoint describes alcoholism as a result of a failure to cope. The self-efficacy for coping without alcohol is low among alcoholic individuals, contributing to continued use and the eventual development of dependence. Petraitis, Flay, and Miller (1995) have postulated a social learning theory model of adolescent experimentation and the eventual problem use of alcohol and other drugs.

Sociocultural Theories : Sociocultural theories are often based on observations of social groups that have high and low rates of alcoholism. Theorists hypothesize that ethnic groups such as Jews that introduce children to modest levels of drinking in a family atmosphere and that eschew drunkenness have low rates of alcoholism.

Some other groups such as Irish men, with high rates of abstention but a tradition of drinking to the point of drunkenness among drinkers, are thought to have high rates of alcoholism. However, these theories often depend on stereotypes that are frequently erroneous and there are several exceptions to these rules. For example, some theories based on observations of the Irish and the French would have predicted high rates of alcoholism among the Italians, although alcohol problems are not generally observed at a high level in this group.

Childhood behaviour problems : Various studies indicate that childhood problem behaviour and aspects of a child’s temperament may predict both behaviour problems

and problems with alcohol and substance abuse during adolescence and young adulthood. An association between behavioural problems (i.e., conduct problems, attention deficit disorder, and hyperactivity) occurring in childhood and adolescence and consequent poor adult outcomes, including alcoholism, has been found in a variety of samples, including child guidance clinic subjects (Robins, 1966), community samples (Jones, 1968), and among adopted individuals at risk for alcoholism (Cadoret et al., 1995). For many, these alcohol use disorders persist into young adult life and possibly beyond (Rohde et al., 2001).

Temperament : While considerable research has shown that a predisposition to alcoholism is partially due to genetic factors, several studies suggest that this genetic susceptibility may be expressed, in part, through an individual's temperament. Tarter and Vanyukov (1994), for example, propose a temperament model of alcoholism risk based on five temperament traits that increase an individual's likelihood for developing alcoholism.

These traits include behavioural activity level, sociability, attention span/persistence, emotionality, and soothability. Genetics influence each of these five traits, and an individual's likelihood is increased or decreased by the deviation of each trait from the population norm. Thus, individuals whose personality traits are closer to the population norm are thought to have more control over their own behaviour, including substance use. Individuals who have difficulties with behavioural and emotional regulation may be more prone to developing alcoholism in relation to environmental influences and stressors, including seeking environments conducive to alcohol and drug use. Indeed, each of these traits, or trait clusters, that constitute a "difficult" temperament relate to an increased risk for developing a problem with substance use and/or abuse (Ohannessian & Hesselbrock, 1995; Tarter, Kabene, Escallier, Laird, & Jacob, 1990). It should be noted, however, that prenatal, peri-natal, and neonatal circumstances can have profound and persistent influences on temperament, as well (e.g., maternal stress and prenatal exposure to stress hormones; medications delivered during pregnancy and/or delivery; anoxia; hypoxia; birth trauma; child maltreatment; etc.).

Environmental risk factors : The pressures and influences of environment, particularly home environment, neighbourhood and school environment have an impact on the use of alcohol by the individual. The environmental influences can be positive or negative and as varied as stress, love, violence, sexual abuse, nutrition, living conditions, family relationships, health care, school quality, peer pressure and television that may lead to alcohol abuse and dependence.

Environmental factors that play a part in the etiology of drinking behaviour may be divided into those factors that influence the availability of alcohol and those that render the individual vulnerable to the use and abuse of alcohol. In a comparison of risk and protective factors for adolescent substance use between the United States and Australia, common risk and protective factors for the use of alcohol were identified as :

Risks

- Community norms favourable toward alcohol use
- Perceived availability of alcohol
- Poor family management
- Family history of substance use
- Parental attitudes favourable to alcohol use

- Favourable attitudes toward antisocial behaviour
- Favourable attitudes toward alcohol use
- Friends' alcohol use
- Sensation seeking
- Antisocial behaviour

Family interaction : Positive parental attitudes to alcohol and drug use have a major influence in shaping use in children. Where one or both parents abuse alcohol, families manifest higher levels of conflict, disruption, economic difficulties, breakdown and impaired mother-child attachment. In addition, problem drinking by parents may lead to inconsistent and unpredictable parenting behaviours and contribute to poorer monitoring of adolescent behaviour. A history of unfair, inconsistent and harsh discipline by parents predicts both alcohol and depressive disorders.

Frequently, more than one member of the nuclear or extended family experiences a substance dependency. This complicates the identification of specific influences that family environment, child-rearing practices, or inter-parental interaction may play in the development of alcoholism. Three general contemporary models of family influences can be identified: a family disease model, a family systems model, and a behavioural family approach (McCrary & Epstein, 1996; McCrary, Kahler, & Epstein, 1998).

The family disease model is based on an assumption that all family members suffer from some degree of either alcoholism or codependency. Further, alcoholism and codependency are interrelated in such a manner as to enable (perpetuate) the alcohol problem. Although in this model the specific etiology is regarded as biological, alcoholism is being maintained by the family disease (Sheehan & Owen, 1999).

In the family systems model, the etiology of alcoholism and substance abuse is focused on the behaviour of family members around drinking, with particular attention paid to the family of origin and the role of the spouse/partner (O'Farrell & Fals-Stewart, 1998; Steinglass, Bennett, Wolin, & Reiss, 1987; Steinglass, Weiner, & Mendelson, 1971). The model assumes that, over time, alcohol use stabilizes the family system and that the family organizes their interactions and structure around alcohol use to achieve and preserve system 'homeostasis.' In other words, the family maintains the alcohol problem despite the associated problems because it requires less effort than changing or because it allows the family to avoid changing a more disturbing problem (e.g., sexual abuse).

The behavioural family approach focuses on the family members' behaviours (especially those of the spouse/partner), as both antecedents to and reinforcers of, alcohol or substance use. These responses are thought to help develop and maintain the drinking problem. Bennett and Wolin (1990) found that continuing interaction between adult offspring and their alcoholic parents is associated with increased rates of alcoholism, at least among the male offspring. On the other hand, certain family rituals, such as eating dinner together or celebrating holidays together, may serve to protect offspring against the development of alcoholism (cf. Bennet et al., 1987). It is important to note that family member behaviour can influence the alcoholic individual to consider change, act to change, maintain the change, or relapse to drinking (Walitzer, 1999).

Peer affiliation : Adolescents with alcohol- and drug-using friends are more likely to use the same substances. Some adolescents may self-select into high risk groups because of high levels of risk-taking and novelty-seeking behaviour. Adolescents often cite an increased ability to socialize with friends, reducing tension and anxiety (especially in

mixed gender situations), reducing boredom, and/or getting high as reasons for their alcohol and other substance use. Peer influences are consistently cited as risk factors for initiating alcohol, tobacco, and other drug use among children and adolescents (cf. Kandel & Yamaguchi, 1999; Wills, Vaccaro, & McNamara, 1992; Avera & Hesselbrock, 2001). Peers influence adolescents' values, behaviours, attitudes, and choice of other friends. However, the closeness of the specific peer relationship is an important determinant of the strength of peer influences on drinking behaviour. Alcohol use by an adolescent's best friend is more predictive of alcohol use and maintenance of drinking behaviour than reports of use by other friends. Characteristics of peers may also be relevant.

Employment : Certain occupations carry a higher risk of alcohol related problems. These include being a publican, where there is easy access to alcohol, and in professions such as law, where income and social pressure facilitate drinking . The level of stress in a work environment may also contribute to risks for high alcohol intake. Unemployment also has been suggested as a causative factor for heavy drinking.

Culture : Social and cultural factors associated with increased risk of alcohol problems include permissive alcohol legislation such as lower age of legal drinking, greater availability of alcohol and greater socioeconomic deprivation. The acceptance or otherwise of drunken behaviour by societies shows great variation. These variations are culture-bound, but there are historical examples of cultures in which changes in the behaviours that are seen as acceptable have occurred over time.

It can be seen from the above discussion that alcohol use and abuse is best viewed through the framework of a multifactorial biopsychosocial model, which acknowledges the interplay of genetic, familial, physiological, psychological and social factors. Age, role, sex, social group and peer pressure, the family, community and occupational environment, as well as overall cultural values and controls on alcohol use, will act upon drinking behaviour. The individual's genetic makeup, personality, sense of control and efficacy, degree of dependence, the presence of brain damage or psychiatric problems, reaction to internal and external cues or stimuli, financial state and the values of a treatment programme will all affect attempts to change drinking behaviour.

Self Assessment Questions 2

1) What is the most pertinent nutritional deficiency in alcohol abuse and dependence?

.....

2) Describe the features of Fetal Alcohol Syndrome.

.....

3) How does the family system model explain the etiology of alcoholism?

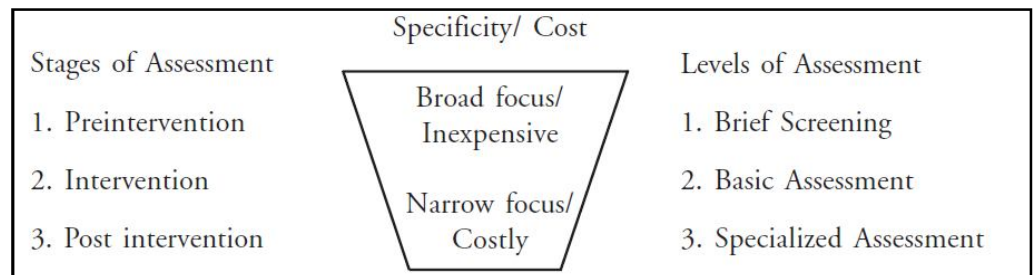
.....

1.7 ASSESSMENT OF ALCOHOL ABUSE AND DEPENDENCE

Assessment is not a one time phenomenon. This is carried out at various stages. Thus, the stages of assessment include:

- a) Preintervention: where the purpose of assessment is to define the problem, formulate treatment, select an appropriate treatment from various modalities and motivate clients for treatment.
- b) Intervention: here assessment is done to monitor progress
- c) Post intervention: assess maintenance and abstinence status.

Depending on the reasons for assessment and the settings in which the assessment is being carried out (inpatient v/s outpatient), there can be various levels of assessment. This can range from brief screening and basic assessment for diagnosis to specialized assessment for taking clinical decision regarding treatment and re-assessment for continuing care.



(Rao. Mohan &Lal, 2005)

The key to appropriate management is a thorough history, proper physical examination, neuropsychiatric examination and relevant lab- investigation. Important aspects from the alcohol use misuse perspective are as follows:

Phase 1 – Ask

- i) Ask all patients about alcohol and other substance misuse, including prescribed and over-the counter medications.

Clinical indicators for screening include:

- Patients who are pregnant or trying to conceive.
 - Patients who are likely to drink heavily, such as smokers, adolescents, and young adults.
 - Patients who have health problems that might be alcohol induced, such as cardiac arrhythmia, dyspepsia, liver disease, depression or anxiety, insomnia, trauma.
 - Patients have a chronic illness that isn't responding to treatment as expected, such as chronic pain, diabetes, gastrointestinal disorders, depression, heart disease, hypertension.
- ii) Differentiate between alcohol use, harmful use and dependence.
 - iii) Conceptualise assessment as ongoing and not necessarily “one-off” and record the information.
 - iv) Recognise that the manner and style in which this is done can be a powerful determinant of both the extent to which relevant information is elicited and

engagement with the therapeutic process. It's often best to ask about alcohol consumption at the same time as other health behaviours such as smoking, diet, and exercise. Some clinicians have found that prefacing the alcohol questions with a non-threatening opener such as "Do you enjoy a drink now and then?" can encourage reserved patients to talk. In some situations, you may consider adding the questions "How often do you buy alcohol?" and "How much do you buy?" to help build an accurate estimate.

- v) Be aware of, and sensitive to, the ambivalence alcohol-misusing patients may feel.
- vi) Be nonjudgemental and act in a non-confrontational way.

Phase 2 – Assess

- i) Assess the degree of dependence.
- ii) Use the assessment process to educate patients about the effects of alcohol.
- iii) Inform about withdrawal symptoms.
- iv) Make some assessment of the level of motivation or "stage of change" at which the patient may be.

Phase 3 – Advise

- i) Continue the assessment within a brief 5- to 10-minute "motivational interviewing" framework.
- ii) Provide the patient with the opportunity to express anxieties and concerns.
- iii) Offer personalised feedback about clinical findings, including physical examination and biochemical and haematological tests.
- iv) Discuss and outline the personal benefits and risks of continued drinking and safe levels of drinking.
- v) Provide self-help materials (e.g. manuals).

Phase 4 – Assist

- i) Provide support and encouragement and instill positive expectations of success.
- ii) Acknowledge that previous attempts may have engendered loss of confidence and self-esteem.
- iii) Suggest that if the goal is abstinence, a "quit date" is set, so the patient can plan accordingly to rid of any alcohol in the house and safely (is it safe to stop drinking abruptly or not?). Certain conditions warrant advice to abstain as opposed to cutting down. These include when drinkers:
 - are or may become pregnant
 - are taking a contraindicated medication
 - have a medical or psychiatric disorder caused by or exacerbated by drinking
 - have an alcohol use disorder

If patients with alcohol use disorders are unwilling to commit to abstinence, they may be willing to cut down on their drinking. This should be encouraged while noting that abstinence, the safest strategy, has a greater chance of long-term success.

For heavy drinkers who don't have an alcohol use disorder, use professional judgment to determine whether cutting down or abstaining is more appropriate, based on factors such as these:

- a family history of alcohol problems

- advanced age
- injuries related to drinking
- symptoms such as sleep disorders or sexual dysfunction

It may be useful to discuss different options, such as cutting down to recommended limits or abstaining completely for perhaps a month or two, then reconsidering future drinking. If cutting down is the initial strategy but the patient is unable to stay within limits, recommend abstinence.

- iv) Work through a range of alternative coping strategies, including the identification of cues that might help distract the patient.

Phase 5 – Arrange

Be prepared to refer or organise admission to a specialist or appropriate unit if the patient is,

- in severe withdrawal, including delirium tremens;
- experiencing unstable social circumstances;
- likely to develop serious withdrawal due from a severe degree of dependence or a previous episode of severe withdrawal, including delirium tremens;
- severely dependent;
- has a severe comorbid physical illness;
- has comorbid mental illness, including suicidal ideation;
- using multiple substances;
- has a history of frequent relapse.

During all phases, close attention should be paid to the appropriateness of various options for the particular individual – “tailor-made” where possible.

Various tools/scales are used to assess alcohol problems and determine their severity, such as Alcohol Dependence Scale (ADS), AUDIT (Alcohol Use Disorder Identification Test; Saunders *et al.*, 1993), CAGE (Ewing, 1984), and Addiction Severity Index (5th Edition): ASI (McLellan, Luborsky, Woody, & O’Brien, 1980; McLellan *et al.*, 1992).

1.8 TREATMENT OF ALCOHOL PROBLEMS

Alcohol abuse treatment occurs in a multitude of forms. It may be provided in outpatient or inpatient settings, be publicly or privately funded, and may or may not involve the administration of medication. The differences among the philosophies of, and the services provided in various drug abuse treatment programs may be enormous.

A key therapist responsibility is to help a client find a treatment approach and treatment setting that is effective for him or her, rather than slavishly adhering to a particular treatment model or setting. A second and equally important therapist responsibility is to enhance the client’s motivation to continue to try, even if the initial treatment setting is not effective.

Treatment planning must be multidimensional to recognize that there is more than one effective treatment for alcohol problems. Unlike certain disorders for which one treatment approach has demonstrable superiority over others; in the alcohol field there are a number of legitimate and empirically supported approaches to treatment. These treatments are based in different conceptualizations of the etiology, course, treatment goals, and length of treatment for alcohol problems.

Table 2 : American Society of Addiction Medicine General Guidelines for Selection of Treatment Settings

Level of Care	Criteria
Level I. Outpatient treatment	No serious risk for major withdrawal or withdrawal seizures No acute or chronic medical or psychiatric problems that could interfere with treatment Some openness to change Some ability to maintain change Reasonable environmental support for change
Level II. Intensive outpatient treatment	No serious risk for major withdrawal or withdrawal seizures No acute or chronic medical or psychiatric problems that could be managed with intensive supervision <i>and</i> Some reluctance to change <i>or</i> Limited ability to maintain change <i>or</i> Limited environmental supports for change
Level III. Medically monitored intensive inpatient treatment	At least two: Risk for withdrawal Some level of acute or chronic medical or psychiatric problems that could be managed with intensive supervision Reluctance to change Limited ability to maintain change Limited environmental supports for change
Level IV. Medically managed intensive inpatient treatment	Serious risk for major withdrawal or withdrawal seizures <i>or</i> Acute or chronic medical <i>or</i> psychiatric problems that could interfere with treatment

(Ray & Mondal, 2005)

1.8.1 Psychological Approaches

Among the treatments with the best empirical support are:

- 1) **Brief Intervention:** Brief intervention is designed to be conducted by health professionals who do not specialize in addictions treatment. To identify the key ingredients of brief intervention, six elements were proposed summarized by the acronym FRAMES: feedback, responsibility, advice, menu of strategies, empathy, and self-efficacy. It is generally restricted to four or fewer sessions, each session lasting from a few minutes to 1 hour. It is most often used with adult and adolescent patients who are not alcohol dependent, and its goal may be moderate drinking rather than abstinence.

- 2) **Brief Strategic Family Therapy:** For many individuals with substance abuse disorders, interactions with their family of origin, as well as their current family, set the patterns and dynamics for their problems with substances. Furthermore, family member interactions with the substance abuser can either perpetuate and aggravate the problem or substantially assist in resolving it. Family therapy is particularly appropriate when the client exhibits signs that his substance abuse is strongly influenced by family members' behaviours or communications with them.
- Family involvement is often critical to success in treating many substance abuse disorders—most obviously in cases where the family is part of the problem.
 - Focus on the expectation of change within the family (which may involve multiple adjustments)
 - Test new patterns of behaviour
 - Teach how a family system works—how the family supports symptoms and maintains needed roles
 - Elicit the strengths of every family member
 - Explore the meaning of the substance abuse disorder within the family

BSFT is based on three basic principles:

- i) BSFT is a family systems approach.
- ii) The patterns of interaction in the family influence the behaviour of each family member.
- iii) To plan interventions that carefully target and provide practical ways to change those patterns of interaction.

In BSFT, whenever possible, preserving the family is desirable. While family preservation is important, two goals must be set: to eliminate or reduce the adolescent's use of drugs and associated problem behaviours, known as "symptom focus," and to change the family interactions that are associated with the adolescent's drug abuse, known as "system focus." BSFT can be implemented in approximately 8 to 24 sessions. The number of sessions needed depends on the severity of the problem.

- 3) **Cognitive Behavioural Interventions:** Adapted from Marlatt and Gordon's Relapse Prevention treatment for problem drinking, CBT strategies are based on the theory that learning processes play a role in the development of maladaptive behavioural patterns. Individuals learn to identify and correct problematic behaviours. CBT attempts to help patients recognize, avoid, and cope. That is, RECOGNIZE the situations in which they are most likely to use alcohol, AVOID these situations when appropriate, and COPE more effectively with a range of problems and problematic behaviours associated with alcohol abuse.

CBT has two critical components:

- Functional analysis: For each instance of use during treatment, the therapist and patient do a functional analysis, that is, they identify the patient's thoughts, feelings, and circumstances before and after the alcohol use. Early in treatment, the functional analysis plays a critical role in helping the patient and therapist assess the

determinants, or high-risk situations, that are likely to lead to alcohol use and provides insights into some of the reasons the individual may be using alcohol (e.g., to cope with interpersonal difficulties, to experience risk or euphoria not otherwise available in the patient's life). Later in treatment, functional analyses of episodes of alcohol use may identify those situations or states in which the individual still has difficulty coping.

- Skills training: CBT can be thought of as a highly individualized training program that helps alcohol abusers unlearn old habits associated with abuse and learn or relearn healthier skills and habits. By the time the level of substance use is severe enough to warrant treatment, patients are likely to be using alcohol as their single means of coping with a wide range of interpersonal and intrapersonal problems. Because alcohol abusers typically come to treatment with a wide range of problems, skills training in CBT is made as broad as possible. The first few sessions focus on skills related to initial control of use (e.g., identification of high-risk situations, coping with thoughts about use). Once these basic skills are mastered, training is broadened to include a range of other problems with which the individual may have difficulty coping (e.g., social isolation, unemployment). In addition, to strengthen and broaden the individual's range of coping styles, skills training focuses on both intrapersonal (e.g., coping with craving) and interpersonal (e.g., refusing offers of alcohol) skills. Patients are taught these skills as both specific strategies (applicable in the here and now to control alcohol use) and general strategies that can be applied to a variety of other problems. Thus, CBT is not only geared to helping each patient reduce and eliminate substance use while in treatment, but also to imparting skills that can benefit the patient long after treatment.

CBT has been offered in 12 to 16 sessions, usually over 12 weeks. An individual format is preferred for CBT because it allows for better tailoring of treatment to meet the needs of specific patients. However, a number of researchers and clinicians have emphasized the unique benefits of delivering treatment to substance users in the group format (e.g., universality, peer pressure).

- 4) **Community Reinforcement Approach:** CRA is an individual counseling approach originally developed for alcoholism that includes a Job Club, Marital Counseling, Social Skills/Relapse Prevention training and Disulfiram (Antabuse). Increasing abstinence is the primary goal. To achieve and maintain abstinence, patients need to make major lifestyle changes, particularly in four areas:

- Family relationships
- Recreational activities
- Social networks
- Vocation

High levels of satisfaction in an alcohol-free lifestyle are needed to compete with the reinforcement derived from drug use and the drug-using lifestyle. Therefore, increasing satisfaction in these areas is a major goal for reducing the probability of continuing or resuming use. Patients are assessed at intake in each of these areas, and individual treatment goals are developed by the therapist and patient together. Specific types of counseling and skills training are provided on an as-needed basis, depending on each patient's lifestyle change goals and the skills needed to achieve those goals. Therapists are expected to facilitate achievement of targeted goals through extensive outreach whenever necessary.

- 5) **Contingency Management:** Contingency Management involves systematically reinforcing a client with a tangible good or service in exchange for a target behaviour, that may be abstinence from alcohol or limited use of it.
- 6) **Motivational Interviewing/ Enhancement:** Motivational Enhancement Therapy (MET) seeks to evoke from clients their own motivation for change and to consolidate a personal decision and plan for change. The approach is largely client centered, although planned and directed. As applied to alcohol abuse, MET seeks to alter the harmful use of alcohol. Because each client sets his or her own goals, no absolute goal is imposed through MET, although counselors may advise specific goals such as complete abstinence. A broader range of life goals may be explored as well.

MET comprises techniques whereby the counselor responds to client denial and resistance by proposing thoughtful and detailed strategies that are designed to increase client readiness to change (CSAT 1999; Miller and Rollnick 2002; Prochaska and DiClemente 1984). The approach is based on the theory that clients being treated for substance use disorders go through five stages of change: precontemplation, contemplation, action, relapse, and maintenance. Client resistance to treatment indicates that the counselor may be attempting to move the client to the next stage too quickly.

MET is based on principles of cognitive and social psychology. The counselor seeks to develop a discrepancy in the client's perceptions between current behaviour and significant personal goal; emphasis is placed on eliciting from clients self-motivational statements of desire for and commitment to change. The working assumption is that intrinsic motivation is a necessary and often sufficient factor in instigating change. MET is typically conducted as individual counseling, though family members may also be present and engaged. It is typically brief, limited to two to four sessions that each last 1 hour. MET may be insufficiently directive for clients who desire clear direction and advice.

- 7) **Solution-Focused Brief Therapy:** The Solution-Focused Model is a brief therapy approach developed over the past 20 years at the Brief Family Therapy Center in Milwaukee, WI. The approach was developed for low-income clients with serious alcohol or other drug problems. Because the model stresses that the problem and solution are not necessarily related, the type of drug is not seen as a critical factor in determining differential treatment. Primarily, the model is designed to help clients engage their own unique resources and strengths in solving the problems that bring them into treatment. Goals are the entire focus of the solution-focused brief therapy approach. The model uses a specialized interviewing procedure to negotiate treatment goals whose qualities facilitate efficient and effective treatment. Goals are the entire focus of this approach. The goals must be:
 - Salient to the client rather than the therapist or treatment program.
 - Small rather than large.
 - Described in specific, concrete, and behavioural terms.
 - Described in situational and contextual rather than global and psychological terms.
 - Stated in interactional and interpersonal rather than individual and intrapsychic terms.

- Described as the start of something rather than the end of something.
- Described as the presence of something rather than the absence of something.
- Realistic and immediately achievable within the context of the client's life.

The approach proposes that the solution(s) to the problems that a client brings into treatment may have little or nothing to do with those problems. This is particularly true in the treatment of problem drinking, where any of a variety of life experiences or actions on the client's part, which have little to do with his or her use of alcohol, may result in a resolution of the problem. While the number of potential solutions is limitless, one example is a problem drinker who stops using problematically when he or she:

- Obtains employment.
- Ends or begins a relationship.
- Makes new friends.
- Relocates.

Treatment therefore need not make alcohol the primary focus to resolve the drinking problem. Rather, the focus returns to helping the client achieve the personal goals he or she sets.

- 8) **Supportive-Expressive Therapy:** Supportive-Expressive therapy (SE) is a short-term psychodynamic treatment. Its goal is to help patients gain understanding of conflictual relationship patterns. The main techniques include supportive techniques to bolster the therapeutic alliance and interpretations to help patients gain self-understanding. The therapy has two main components:
- Supportive techniques to help patients feel comfortable in discussing their personal experiences.
 - Expressive techniques to help patients identify and work through interpersonal relationship issues.

Supportive-Expressive therapy (SE) also helps in alcohol dependence.

- 9) **Twelve-Step Facilitation:** TSF has been utilized in controlled outcome studies with alcohol abusers and alcoholics and with persons who have concurrent alcohol-cocaine abuse and dependency. It has been used with clients of diverse socioeconomic, educational, and cultural backgrounds and a range of maladjustment. It consists of a brief, structured, and manual-driven approach to facilitating early recovery from alcohol abuse/alcoholism and other drug abuse/addiction. TSF seeks to facilitate two general goals in individuals with alcohol or other drug problems: acceptance (of the need for abstinence from alcohol or other drug use) and surrender, or the willingness to participate actively in the 12-step fellowships as a means of sustaining sobriety. These goals are in turn broken down into a series of cognitive, emotional, relationship, behavioural, social, and spiritual objectives.

The theoretical rationale is based in the 12 steps and 12 traditions of AA and includes the need to accept that willpower alone is not sufficient to achieve sustained sobriety, that self centeredness must be replaced by surrender to the group conscience, and that long-term recovery consists of a process of spiritual renewal.

The primary mechanism action is active participation and a willingness to accept a higher power as the locus of change in one's life. It is intended to be implemented on an individual basis in 12 to 15 sessions and is based in behavioural, spiritual, and cognitive principles that form the core of 12-step fellowships such as Alcoholics Anonymous (AA) and Narcotics Anonymous (NA).

TSF was designed to be used in the context of short-term individual counseling but has been adapted for use in a group format. One part of TSF (the conjoint program) is specifically intended to be implemented through sessions with a significant other (SO). It is suitable for problem drinkers and other drug users and for those who are alcohol or other drug dependent.

- 10) **Humanistic and Existential Therapies:** Humanistic and existential psychotherapies use a wide range of approaches to the planning and treatment of substance abuse disorders. They are, however, united by an emphasis on understanding human experience and a focus on the client rather than the symptom. Humanistic and existential approaches share a belief that people have the capacity for self-awareness and choice. However, the two schools come to this belief through different theories. Humanistic and existential therapeutic approaches may be particularly appropriate for short-term substance abuse treatment because they tend to facilitate therapeutic rapport, increase self-awareness, focus on potential inner resources, and establish the client as the person responsible for recovery. Thus, clients may be more likely to see beyond the limitations of short-term treatment and envision recovery as a lifelong process of working to reach their full potential.

Humanistic and existential approaches can be used at all stages of recovery in creating a foundation of respect for clients and mutual acceptance of the significance of their experiences. There are, however, some therapeutic moments that lend themselves more readily to one or more specific approaches.

- *Client-centered* therapy can be used immediately to establish rapport and to clarify issues throughout the session.
- *Existential* therapy may be used most effectively when a client has access to emotional experiences or when obstacles must be overcome to facilitate a client's entry into or continuation of recovery (e.g., to get someone who insists on remaining helpless to accept responsibility for her actions).
- *Narrative* therapy can be used to help the client conceptualize treatment as an opportunity to assume authorship and begin a "new chapter" in life.
- *Gestalt* approaches can be used throughout therapy to facilitate a genuine encounter with the therapist and the client's own experience.
- *Transpersonal* therapy can enhance spiritual development by focusing on the intangible aspects of human experience and awareness of unrealized spiritual capacity.

Using a humanistic or existential therapy framework, the therapist can offer episodic treatment, with a treatment plan that focuses on the client's tasks and experiences between sessions.

- 11) **Group Therapy:** Group psychotherapy is one of the most common modalities for treatment of substance abuse disorders. Group therapy is defined as a meeting of two or more people for a common therapeutic purpose or to achieve a common goal. It differs from family therapy in that the therapist creates open- and closed-

ended groups of people previously unknown to each other.

Group psychotherapy can be extremely beneficial to individuals with substance abuse problems. It gives them the opportunity to see the progression of abuse and dependency in themselves and others; it also provides an opportunity to experience personal success and the success of other group members in an atmosphere of support and hope. There are five *models* of group therapy that are effective for substance abuse treatment:

- Psychoeducational Groups: designed to educate clients about substance abuse and related behaviours and consequences. This type of group presents structured, group-specific content, often taught by means of videotapes, audiocassette, or lectures.
- Skills Development Groups: Skills development groups teach skills that help clients maintain abstinence, such as
 - ✓ Refusal skills
 - ✓ Social skills
 - ✓ Communication skills
 - ✓ Anger management skills
 - ✓ Parenting skills
 - ✓ Money management skills
- Cognitive–Behavioural/Problem-Solving Groups: work to change learned behaviour by changing thinking patterns, beliefs, and perceptions. The group leader focuses on providing a structured environment within which group members can examine the behaviours, thoughts, and beliefs that lead to their maladaptive behaviour.
- Support Groups: bolster members’ efforts to develop and strengthen their ability to manage their own thinking and emotions and to develop better interpersonal skills as they recover from substance abuse.
- Interpersonal Process Groups: use psychodynamics, or knowledge of the way people function psychologically, to promote change and healing. All therapists using a “process-oriented group therapy” model continually monitor three dynamics:
 - ✓ The psychological functioning of each group member (intrapsychic dynamics)
 - ✓ The way people are relating to one another in the group setting (interpersonal dynamics)
 - ✓ How the group as a whole is functioning (group as-a-whole dynamics)

Multimodal Models of Treatment:

- 1) **Minnesota Model:** The Minnesota Model approach is typically characterized by a thorough and ongoing assessment of all aspects of the client and of multimodal therapeutic approaches. It may include group and individual therapy, family education and support, and other methods.

Addictions

A multidisciplinary team of professionals (e.g., counselors, psychologists, nurses) plan and assist in the treatment process for each client. The assumption is that abstinence is the prerequisite. Treatment provides tools and a context for the client to learn new ways of living without alcohol and other drugs. This type of treatment can be employed on an inpatient or outpatient basis. The primary goal is lifetime abstinence from alcohol and other mood-altering chemicals and improved quality of life. This goal is achieved by applying the principles of the 12-step philosophy, which include frequent meetings with other recovering people and changes in daily behaviours.

The ultimate goal is personality change or change in basic thinking, feeling, and acting in the world. This approach works by changing an addict's beliefs about his or her relationship to others and to self. This changed perspective occurs by attending meetings, by self-reflection, and by learning new coping skills. Through this process, the client's understanding about himself or herself in relationship to the self and to others is transformed.

Approximately 80 to 90 percent of the treatment occurs in groups; the remainder is in individual sessions. The ideal treatment setting is residential, as this environment most easily conveys dignity and respect for the individual and provides grounds and physical space for solitude and reflection. This model can, however, be applied in any setting.

The following individuals are well suited for this approach:

- Adolescents or adults who have transient intellectual impairment at most.
- People with average or better intellectual ability and at least sixth-grade reading ability.
- Alcoholics or polydrug users.
- People who are dually diagnosed if the psychiatric disorder is stable or not predominant in the clinical picture.
- People who have or develop at least moderate motivation and willingness to change. (Although many come to treatment with some resistance, most will be able to engage in the treatment process within 5 to 10 days. If they cannot, they may be discharged.)

Those not suited for this approach include the converse of the above, as well as individuals who are seeking methadone maintenance, those with poor reading ability or memory impairment, and those not motivated to change.

- 2) **Matrix Model:** The Matrix IOP method was developed initially in the 1980s in response to the growing numbers of individuals entering the treatment system with cocaine or methamphetamine dependence as their primary substance use disorder. Since then, it has also been adapted for treating the alcohol dependent population. The Matrix Model is a comprehensive, multi-format program that covers six key clinical areas:

- Individual/conjoint therapy
- Early recovery
- Relapse prevention

- Family education
- Social support
- Urine testing

It is an integrated therapeutic model incorporating:

- Cognitive behavioural
- Motivational enhancement
- Couples and family therapy
- Individual supportive/expressive psychotherapy and psychoeducation
- Twelve Step facilitation
- Group therapy and social support

The Matrix IOP approach provides a structured treatment experience for clients with alcohol use disorders. Clients receive information, assistance in structuring a substance-free lifestyle, and support to achieve and maintain abstinence from drugs and alcohol. The program specifically addresses the issues relevant to clients who are dependent on alcohol and their families.

For 16 weeks, clients attend several intensive outpatient treatment sessions per week. This intensive phase of treatment incorporates various counseling and support sessions:

- Individual/Conjoint family sessions (3 sessions)
- Early Recovery Skills group sessions (8 sessions)
- Relapse Prevention group sessions (32 sessions)
- Family Education group sessions (12 sessions)
- Social Support group sessions (36 sessions)

1.8.2 Pharmacotherapy

Although it is imperative that pharmacological treatment is administered safely, it is equally important to see it as one part of a phased treatment management process. In other words, “prescribing” is nested within the overall treatment package, which includes psychosocial components that have been negotiated, whether community or hospital based. Pharmacological treatments are usually reserved for patients who have dependence.

Which medication to use will depend on clinical judgment and patient preference. Each has a different mechanism of action. Some patients may respond better to one type of medication than another.

Three oral medications (naltrexone, acamprosate, and disulfiram) and one injectable medication (extended-release injectable naltrexone) are approved for treating alcohol dependence. They have been shown to help patients reduce drinking, avoid relapse to heavy drinking, achieve and maintain abstinence, or gain a combination of these effects. As is true in treating any chronic illness, addressing patient adherence systematically will maximize the effectiveness of these medications. Benzodiazepines has also been found to be effective.

1.8.3 Preventing Relapse

Addiction is a chronic disorder and the ultimate goal of long-term abstinence often requires sustained and repeated treatment episodes. Nearly all addicted individuals believe in the beginning that they can stop using drugs on their own, and most try to stop without treatment. However, most of these attempts result in failure to achieve long-term abstinence. Research shows that long-term drug use significantly changes brain function and these changes persist long after the individual stops using drugs. These drug-induced changes in brain function may have many behavioural consequences, including the compulsion to use drugs despite adverse consequences—the defining characteristic of addiction (Leshner, 1999).

The first 12 months of abstinence are especially difficult, and relapse is most common during this time. If patients do relapse, recognize that they have a chronic disorder that requires continuing care, just like asthma, hypertension, or diabetes. Recurrence of symptoms is common and similar across each of these disorders, perhaps because they require the patient to change health behaviours to maintain gains.

The most important principle is to stay engaged with the patient and to maintain optimism about eventual improvement. Most people with alcohol dependence who continue to work at recovery eventually achieve partial to full remission of symptoms, and often do so without specialized behavioural treatment. For patients who struggle to abstain or who relapse:

- If the patient is not taking medication for alcohol dependence, consider prescribing one and following up with medication management
- Treat depression or anxiety disorders if they are present more than 2 to 4 weeks after abstinence is established.
- Assess and address other possible triggers for struggle or relapse, including stressful events, interpersonal conflict, insomnia, chronic pain, craving, or high-temptation situations such as a wedding or convention.
- If the patient is not attending a mutual help group or is not receiving behavioural therapy, consider recommending these support measures.
- Encourage those who have relapsed by noting that relapse is common and pointing out the value of the recovery that was achieved.
- Provide follow-up care and advise patients to contact you if they are concerned about relapse.

Psychological/ Psychotherapeutic Strategies

Several models have been proposed to conceptualize the maintenance or relapse process, with associated treatments. The most prominent maintenance models include Marlatt and Gordon's (1985) relapse prevention (RP) model, the CENAPS® Model of Relapse Prevention Therapy (CMRPT®) and the disease model, best exemplified by the practices common to Alcoholics Anonymous.

RP Model (Marlatt & Gordon): The RP model is an extension of the functional-analytic model and focuses on the interplay among environment, coping skills, and cognitive and affective responses in maintaining successful change. In the RP model, relapse occurs in response to a high risk situation for which the client either lacks or does not apply effective coping skills. Low self-efficacy for coping with the situation may contribute

to the difficulties. If the client does not cope effectively, use of alcohol is likely. Following initial drinking, Marlatt and Gordon suggested that a cognitive factor, the “abstinence violation effect” (AVE), is activated. The AVE represents all-or-nothing thinking; after drinking, the client makes a cognitive shift to viewing him- or herself as “drinking”; therefore, he or she continues to drink. RP treatment focuses on several points of intervention common to cognitive-behavioural treatment, such as identification of high-risk situation and acquisition of coping skills, as well as cognitive restructuring to help the client view a drinking episode as a “lapse” from which the client can learn and return to abstinence rather than a “relapse” into previous drinking patterns.

RP also focuses on lifestyle changes to decrease the presence of high-risk situations, and encourages development of a balance between pleasures and desires, and obligations and responsibilities (a “want–should” balance) in the client’s life. In his more recent work, Marlatt (Marlatt&Donovan, 2005; Witkiewitz&Marlatt, 2004) has described relapse as “multidimensional and dynamic” (Marlatt&Donovan, 2005), and considers the influence of longer-term risk factors such as family history and social supports, as well as more proximal influences on relapse. He also suggests that there are reciprocal interactions among cognitions, coping skills, affect and drinking.

The CENAPS® Model of Relapse Prevention Therapy (Terence Gorski):

CMRPT is a comprehensive method for preventing chemically dependent clients from returning to alcohol and other drug use after initial treatment and for early intervention should chemical use occur. It is a clinical procedure that integrates the disease model of chemical addiction and abstinence-based counseling methods with recent advances in cognitive, affective, behavioural, and social therapies. The method is designed to be delivered across levels of care with a primary focus on outpatient delivery systems. The CMRPT consists of five primary components:

- 1) Assessment.
- 2) Warning sign identification.
- 3) Warning sign management.
- 4) Recovery planning.
- 5) Relapse early intervention training.

Cognitive, affective, and behavioural therapy principles are targeted to accomplish the specific goals of each CMRPT component. The CMRPT incorporates standard and structured group and individual therapy sessions and psychoeducational (PE) programs that focus primarily on these five primary goals. The treatment is holistic in nature and involves clients in a structured program of recovery activities. Willingness to comply with the recovery structure and actively participate within the structured sessions is a major factor in accepting clients for treatment with this model.

This model is also similar to and has been heavily influenced by the Cognitive-Behavioural Relapse Prevention Model developed by Marlatt and Gordon (George 1989; Marlatt and Gordon 1985). The major difference is that the CMRPT integrates abstinence-based treatment and has greater compatibility with 12-step programs than the Marlatt and Gordon model.

Clients who do well with the CMRPT have average or above-average conceptual skills and eighth grade or better reading and writing skills but no learning disabilities, severe cognitive impairments, active impulse control disorders, or other diagnosis that interferes with the ability to participate in a structured cognitive-behavioural therapy program. In addition, they have been detoxified.

Pharmacological Strategies

Medicines like acamprosate, naltrexone and disulfiram are used; however, there are conditions in which these should be used. Selective Serotonin Reuptake Inhibitors (SSRIs) may also be considered under specified conditions.

Management of Dual Disorders

Dual disorders recovery counseling (DDRC) is an integrated approach to treatment of patients with alcohol use disorders and comorbid psychiatric disorders. The DDRC model, which integrates individual and group addiction counseling approaches with psychiatric interventions, attempts to balance the focus of treatment so that both the patient's addiction and psychiatric issues are addressed.

The DDRC model is based on the assumption that there are several treatment phases that patients may go through. These phases are rough guidelines delineating some typical issues patients deal with and include:

Phase 1—Engagement and Stabilization. Patients are persuaded, motivated, or involuntarily committed to treatment. The main goal of this phase is to help stabilize the acute symptoms of the psychiatric illness and/or the drug use disorder. Another important goal is to motivate patients to continue in treatment once the acute crisis is stabilized or the involuntary commitment expires.

Phase 2—Early Recovery. This phase involves learning to cope with desires to use chemicals; avoiding or coping with people, places, and things that represent high-risk addiction relapse factors; learning to cope with psychiatric symptoms; getting involved in support groups, such as Alcoholics Anonymous (AA) getting the family involved (if indicated); beginning to build structure into life; and identifying problems to work on in recovery. This phase roughly involves the first 3 months following stabilization.

Phase 3—Middle Recovery. In this phase, patients continue working on issues from the previous phase as needed. In addition, patients learn to develop or improve coping skills to deal with intrapersonal and interpersonal issues. This phase also focuses on helping patients cope with persistent symptoms of psychiatric illness; drug use lapses, relapses, or setbacks; and crises related to the psychiatric disorder. Patients are usually not tapered off medications until they have several months or longer of significant improvement in psychiatric symptomology.

Phase 4—Late Recovery. This phase, also referred to as the “maintenance phase” of recovery, involves continued work on issues addressed in the middle phase of recovery and work on other clinical issues that emerge. Important intrapersonal or interpersonal issues may be explored in greater depth during this phase for patients who have continued abstinence and remained relatively free of major psychiatric symptoms. Many patients with chronic or persistent forms of psychiatric illness (e.g., schizophrenia, bipolar disease, recurrent major depression), or severe personality disorders such as borderline personality disorder, often continue active involvement in treatment. Treatment during this phase may involve maintenance pharmacotherapy, supportive DDRC counseling, or some specific form of psychotherapy (e.g., interpersonal psychotherapy). Involvement in support groups continues during this phase of recovery as well.

The DDRC approach can be adapted for virtually any type of addiction, mental health disorder, or combination of dual disorders. However, it is best suited for mood, anxiety, schizophrenic, personality, adjustment, and other addictive disorders, in combination with alcohol or other drug addiction.

Clients with mental retardation, organic brain syndromes, head injuries, and more severe forms of thought disorders are less suited for this counseling approach.

Self Assessment Questions 3

1) What are the stages of assessment of alcohol abuse and dependence?

.....
.....
.....
.....

2) Mention the principles of Brief Strategic Family Therapy (BSFT).

.....
.....
.....
.....

3) What is psychoeducational group?

.....
.....
.....
.....

4) Describe the treatment phases as per the Dual disorders recovery counseling (DDRC) model.

.....
.....
.....
.....

1.9 LET US SUM UP

The alcohol related disorders exact an immense toll on the mental and physical well-being of many individuals. Consequently, they jeopardize the integrity of the family and other social forces represented by the healthcare system, the law, and the economy. Because of the prevalence of alcohol related disorders, and because they can masquerade as diverse medical and other psychiatric disorders, their recognition and initial treatment are relevant to all physicians, in particular, the mental health professional. Alcohol-related disorders are heterogeneous in terms of the interactions between the manifest psychopathology of the individual patient and the psychopharmacologic actions of a given drug, within the relevant sociocultural context. This perspective is useful in seeking an etiologic understanding of these disorders, conducting a clinical assessment, planning for the initial treatment of the direct consequences of alcohol use and developing and implementing a comprehensive treatment strategy for patients.

1.10 ANSWERS TO SELF ASSESSMENT QUESTIONS

Self Assessment Questions 1

- 1) The primary elements of addictive disease are, compulsive use, loss of control, and continued use despite adverse consequences.
- 2) Type 1 alcoholism is characterized by:
 - Age of onset over 25 years
 - No criminality or treatment for alcohol problems in the biological parents
 - Loss of control (or psychological dependence)
 - Guilt and fear about dependence
 - Harm avoidance
 - Reward dependence

Type 2 alcoholism is characterized by:

- Teenage age of onset (under 25 years)
 - Alcohol abuse, criminality and treatment are extensive in the biological father
 - Inability to abstain
 - Aggressive behaviour
 - Novelty-seeking personality traits
- 3) True

Self Assessment Questions 2

- 1) The most pertinent nutritional deficiency in alcohol abuse and dependence is the Wernicke-Korsakoff syndrome (WKS), which results from thiamine deficiency.
- 2) The features of Fetal Alcohol Syndrome (FAS) are as follows: children with FAS have reduced body weight and height, are hyperactive and have subnormal intelligence. Their faces may be recognized by short palpebral fissures, short upturned noses, mid facial hypoplasia, low nasal bridge and a thin upper lip.
- 3) In the family systems model, the etiology of alcoholism is focused on the behaviour of family members around drinking, with particular attention paid to the family of origin and the role of the spouse/partner.

Self Assessment Questions 3

- 1) The stages of assessment are,
 - a) Pre intervention: where the purpose of assessment is to define the problem, formulate treatment, select an appropriate treatment from various modalities and motivate clients for treatment.
 - b) Intervention: here assessment is done to monitor progress
 - c) Post intervention: assess maintenance and abstinence status

- 2) BSFT is based on three basic principles:
 - i) That BSFT is a family systems approach.
 - ii) That the patterns of interaction in the family influence the behaviour of each family member.
 - iii) To plan interventions that carefully target and provide practical ways to change those patterns of interaction.
- 3) Psychoeducational Groups refer to groups designed to educate clients about substance abuse and related behaviours and consequences. This type of group presents structured, group-specific content, often taught by means of videotapes, audiocassette, or lectures.
- 4) The treatment phases as per the Dual disorders recovery counseling (DDRC) model are as follows: Engagement & stabilization, Early recovery, Middle recovery, and Late recovery.

1.11 UNIT END QUESTIONS

- 1) Differentiate between addiction and dependence.
- 2) What are the clinical features of alcohol withdrawal syndromes?
- 3) Describe causes of alcohol dependence.
- 4) Discuss the consequences of alcohol abuse and dependence.
- 5) Explain alcoholism from behavioural theory perspective.
- 6) Discuss the various psychological approaches for the management of alcohol dependence.
- 7) Explain humanistic and existential therapies for management of alcohol dependence.
- 8) Explain Matrix model of treatment of alcohol dependence.

1.12 SUGGESTED READINGS AND REFERENCES

American Psychiatric Association (2000). Diagnostic and statistical manual of mental disorders (4th ed., text rev.). Washington, DC.

American Psychiatric Association (2013). Highlights of Changes from DSM-IV-TR to DSM- 5. American Psychiatric Publishing. 2013

American Society of Addiction Medicine (1996). Patient Placement Criteria for the Treatment of Substance-related Disorders : Chevy Chase, Maryland.

Averna, S., & Hesselbrock, V. (2001). The relationship of perceived social support to substance use in offspring of alcoholics. *Addictive Behaviours*, 26, 363-374.

Berglund, M., Thelander, S., & Jonsson, E. (2003). *Treating Alcohol and Drug Abuse: An Evidence Based Review*. Weinheim, Germany: Wiley-VCH Verlag.

Cloninger, C. R., Bohman, M. & Sigvardsson, S. (1981). Inheritance of alcohol abuse: cross-fostering analysis of adopted men. *Archives of General Psychiatry*, 38, 861-868.

Coombs, R. H. (1997). *Drug-impaired professionals*. Cambridge, MA: Harvard University Press.

- Coombs, R. (2004). *Handbook of Addictive Disorders- A Practical Guide to Diagnosis and Treatment*. New Jersey. John Wiley & Sons. ISBN 0-471-23502-4
- Crome, I. B. (1999). Substance misuse and psychiatric comorbidity: towards improved service provision. *Drugs Educ Prevent Policy* 6:154–71. Crome, I. (2004). The process of assessment. In I. B. Crome, A. H. Ghodse, E. Gilvarry, et al., eds. *Young People and Substance Misuse*. London: Gaskell, pp. 129–39.
- Currie, S. P., Clark, S., Hodgins, D. C., et al. (2004). Randomised controlled trial of brief cognitive behavioural interventions for insomnia in recovering alcoholics. *Addiction* 99:1121
- Sullivan, J. T., & K. Sykora, et al. (1989).
- Devor EJ & Cloninger CR. (1989): Genetics of alcoholism. *Annu Rev Genet* 23: 19–36
- Donovan, D.M. & Marlatt, G.A. (Eds.). (2005). *Assessment of Addictive Behaviours* (2nd Ed.). New York: Guilford Press
- Goodwin, D. W. (1976). *Is alcoholism hereditary?* New York: Oxford University Press.
- Gorski, T. T. (2000). CENAPS model of relapse prevention therapy (CMRPT). In J. J. Boren, L. S. Onken, & K. M. Carroll (Eds.), *Approaches to drug abuse counseling* (pp. 21–34). Bethesda, MD: National Institute on Drug Abuse.
- Inaba, D. S., & Cohen, W. E. (2000). *Uppers, downers, all arounders* (4th ed.). Ashland, OR: CNS Publications.
- Jellinek, E. M. (1960). *The Disease Concept of Alcoholism*, Hillhouse, (New Haven).
- Leshner, A. I. (2001, Spring). Addiction is a brain disease. *Science and Technology Online*. Available from <http://www.nap.edu/issues/17.3/leshner.htm>.
- Kendler KS, Schmitt E, Aggen SH, Prescott CA (2008) Genetic and environmental influences on alcohol, caffeine, cannabis, and nicotine use from early adolescence to middle adulthood. *Arch Gen Psychiatry* 65:674–682
- Kendler, S. K., Chen, Xiangning., Dick, D., Maes, H., Gillespie, N., Neale, C.M. & Riley, B. Recent advances in the genetic epidemiology and molecular genetics of substance use disorders. *Nat Neurosci.* ; 15(2): 181–189
- Schuckit MA (2005). Alcohol-related disorders. In: Sadock, BJ, Sadock VA, eds. *Kaplan & Sadock's Comprehensive Textbook of Psychiatry*. 8th ed. Vol. 1. Baltimore: Lippincott Williams & Wilkins; 2005:1168
- Leshner, A. (1999). Science-based views of drug addiction and its treatment. *Journal of the American Medical Association*, 282(14), 1314–1316.
- Lingford-Hughes, A. R., Welch, S., & Nutt, D. J. (2004). Evidence based guidelines for the pharmacological management of substance misuse, addiction and comorbidity: recommendations from the British Association for Psychopharmacology. *J Psychopharmacol* 18:293–335.
- Lishman, W. (1987). *Organic Psychiatry: The Psychological Consequences of Cerebral Disorder*. Oxford: Blackwell Scientific.
- Lishman, W. A. (1990). Alcohol and the brain. *Br J Psychiatry* 156:635–44. Dawson DA, Grant BF, Stinson FS, Chou PS.

- Lynskey, M. T., Agrawal, A., & Heath, A. C. (2010). Genetically informative research on adolescent substance use: methods, findings, and challenges. *Journal of the American Academy of Child and Adolescent Psychiatry*, 49 (12), 1202-1214
- Marlatt G.A. & Gordon J.R. (Eds.). (1985). *Relapse prevention: Maintenance strategies in the treatment of addictive behaviours*. New York: Guilford Press.
- McCrary, B. S., Kahler, C., & Epstein E. E. (1998). Families of alcoholics. In N. N. Singh, (Ed.). *Comprehensive clinical psychology, volume. 9: Applications in diverse populations* (pp.199-218). Oxford, England: Elsevier Science.
- Nestler, E. (2001). Psychogenomics: Opportunities for understanding addiction. *Journal of Neuroscience*, 21(21), 8324–8327.
- O'Farrell, T. J., & Fals-Stewart, W. (1999). Treatment models and methods: Family models. In B. S. McCrary, & E. E. Epstein (Eds.). *Addictions: A comprehensive guidebook*. New York: Oxford University Press.
- Petraitis, J., Flay, B. R., & Miller, T. Q. (1995). Reviewing theories of adolescent substance use: Organizing pieces in the puzzle. *Psychological Bulletin*, 117, 67–86.
- Prochaska, J., and DiClemente, C. *The Transtheoretical Approach: Crossing the Traditional Boundaries of Therapy*. Homewood, IL: Dow Jones/Irwin, 1984.
- Rao, R, Mohan & I., Lal, R. (2005). Assessment and Diagnosis in Substance Use Disorder. In Rakesh Lal (Ed.), *Substance Use Disorders: Manual for Physicians*, 2, pp. 1- 2. National Drug Dependence Treatment Centre. All India Institute of Medical Sciences. New Delhi.
- Rehm, J.; Mathers, C.; Popova, S.; et al. (2009b). Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. *Lancet* 373(9682):2223–2233.
- Rohde, P., Lewinsohn, P. M., Kahler, C. W., Seeley, J. R., & Brown, R. A. (2001). Natural course of alcohol use disorders from adolescence to young adulthood. *Journal of the American Academy of Child and Adolescent Psychiatry*, 40, 83-90
- Rosenthal, R. N., & Westreich, L. (1999). Treatment of persons with dual diagnoses of substance use disorder and other psychological problems. In B. S. McCrary, & E. E. Epstein (Eds.). *Addictions: a comprehensive guidebook* (pp. 439-476). New York: Oxford University Press
- Sheehan, T., & Owen, P. (1999). The disease model. In B. S. McCrary, & E. E. Epstein (Eds.). *Addictions: A comprehensive guidebook* (pp.268-287). New York: Oxford University Press
- Siegel, S. (1983). Classical conditioning, drug tolerance, and drug dependence. In R. Smart, F. Glasser, & Y. Israel (Eds.). *Research advances in alcohol and drug problems* (vol. 7). New York: Plenum Press.
- Sigvardsson, S., Bohman, M. & Cloninger, C. R. (1996). Replication of the Stockholm adoption study of alcoholism: conÆrmatory cross-fostering analysis. *Archives of General Psychiatry* 53, 681±687
- Smith, D. E., & Seymour, R. (2001). *Clinician's guide to substance abuse*. New York: McGraw- Hill.
- Tarter, R. E. & Vanyukov, M. (1994). Stepwise developmental model of alcoholism

Addictions

etiology. In R. A. Zucker, G. Boyd, & J. Howard. The development of alcohol problems: Exploring the biopsychosocial matrix of risk. NIAAA research monograph 26 (pp.303-329). Bethesda, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism. (NIH pub. no. 94-3495)

Walitzer, K. S. (1999). Family therapy. In P. J. Ott, R. E. Tarter, & R. T. Ammerman (Eds). Sourcebook on substance abuse: Etiology, epidemiology, assessment, and treatment (pp. 337-349). Boston, MA: Allyn & Bacon.

Wikler, A. (1973). Dynamics of drug dependence. Implications of a conditioning theory for research and treatment. Archives of General Psychiatry, 28, 611-616

World Health Organization. (1964). Expert committee on drug dependence [Tech. Rep. Service No. 273]. Geneva, Switzerland: Author.

World Health Organisation.(1992). International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10). Geneva: WHO.

Wurmser, L. (1984-85). The role of superego conflicts in substance abuse and their treatment. International Journal of Psychoanalysis and Psychotherapy, 10, 227-258.