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Case Report

SOCIAL IMPLICATIONS OF ALCOHOLISM: A CASE REPORT AND REVIEW

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ABSTRACT
Alcoholic dependence and withdrawal are one of the commonest substance abuse disorders encountered in any clinical setting. The accompanying social, psychological, emotional, economical and medical implications are far too many to be shrugged off as trivial. Through the case discussion of this 35 year old alcoholic, I have devised an effort to follow the course and complications of alcoholism.

Keywords: *Alcohol Dependence, Withdrawal, Implications of Alcoholism*

INTRODUCTION
Alcohol is the commonest recreational drug. It is estimated that approximately 90% people consume it at some stage in their lifetime and about 30% develop alcohol related disorders (Sher, 2006). Alcohol has significant social, psychological, medical and economic ramifications. The discussion of this 35 year old male alcoholic is an attempt at understanding and summarizing the various crucial standpoints of alcoholism in general.

CASES
A 35 year old male was referred to us from the Neurosurgery department, four days post a burr hole surgery for subdural hematoma, for complains of withdrawal tremors and profuse sweating. The patient was an emaciated male with a healthy wound over his head post-surgery and had visible tremors over both hands. He was conscious, cooperative and well oriented to time, place and person with adequate insight and judgment.

He hailed from a rural village and low socioeconomic background. He first started drinking alcohol at the age of sixteen under peer pressure. Eventually his quantity of liquor consumption increased. He was a fisherman by occupation. Unfortunately, he had had a disappointing few seasons in succession. To supplement his poor income he had to take up a few odd jobs to support his family. His failing economic condition and his rising frustrations of not being able to support his family put a strain on his inherent Coping mechanisms. This augmented his underlying motivation for alcohol consumption. Under influence he would often physically abuse his wife. The habit became a nuisance and he started spending most of his earnings buying liquor, becoming a vicious cycle by then. He even started stealing money saved by his wife to fuel his addiction. Soon the already tight financial situation worsened. His kids were refrained from attending school on account of consecutively defaulting on payment of tuition fees. Eventually, he started having a few episodes of En Bloc blackouts (Explained later in the section: Complications of alcoholism.)

One night, while working as a laborer, he consumed a large amount of liquor and while carrying a heavy load down the stairs, he slipped and fell head first resulting in a subdural hematoma. Four days post-surgery he presented with the present symptoms.

DISCUSSION
Alcohol is a commonly misunderstood depressant of the nervous system. Let’s go over some of the most basic, but poorly visualized concepts and their importance with regards to alcoholism. The addiction and recovery is beautifully described in Jellinek's curve on Figure 1.

1. ***The motivation:***

Coping strategies are inherent abilities of an individual to cope or deal with stressful situations. There are at least two recognized poles viz. avoiding emotions and problem focused problem solving.

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These coping strategies, employed as a part of a person's personality, has been found to influence the physical abuse potential when under the influence of alcohol, more so in individuals who avoid emotions as opposed to those who employ a problem-focused coping mechanism.

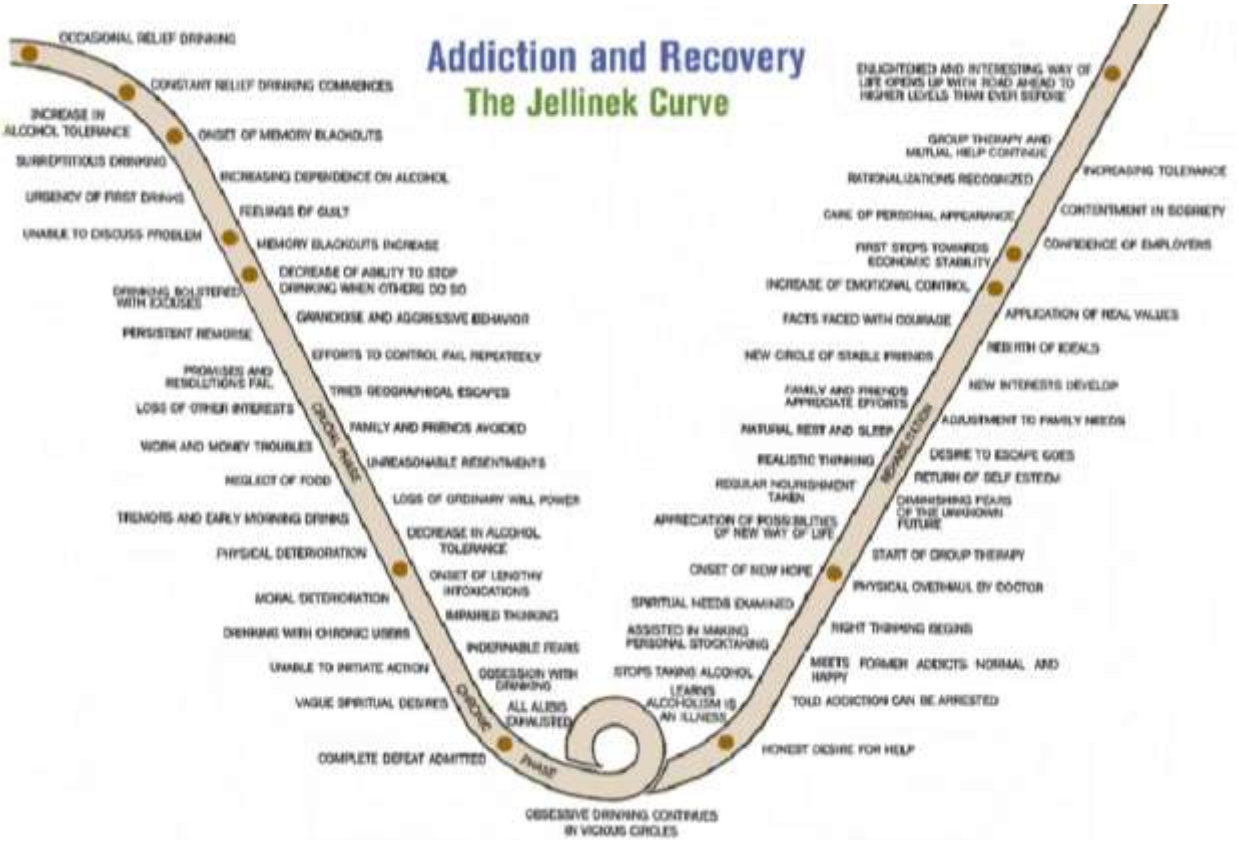

Figure 1: Jellinek's curve describing the cycle of addiction and recovery

Initially, poor coping strategies, as seen in the form of rising frustrations from deteriorating finances in our patient, and improper social support proves to be a major driving force towards alcohol consumption as a way of wanting to escape reality, into his own world where he could imagine himself doing things he could never do in reality! This serves as the Primary Motivation.

This preference towards accepting the alternate imaginative world over reality is called deviance disavowal theory and thus getting inebriated to achieve this state is called social learning.

Social learning and deviance disavowal theory has been suggested as an explanation for the relation between alcohol abuse and violence. It was also noted during the study by Coleman and Straus that spousal abuse was much more commonly seen than child abuse (Coleman and Straus, 1979).

What starts with the primary motivation, as dependence advances, now the patient has to maintain a constant blood alcohol concentration (BAC) to avoid or relieve the physiological effects of withdrawal and his own primary drive of avoiding suffering becomes less important for his drinking (Edwards and Gross, 1976). This is the Secondary motivation.

This concept is important because in a dependent patient, acute management is centered on taking away his secondary motivation and maintenance of long term abstinence is centered upon helping him cope with his primary motivation.

2. ***Withdrawal, tolerance and relapse***

Sudden cessation in heavy drinkers leads to tremors, sweating, irritability, anxiety, agitation, seizures and features of frank Delirium Tremens. This is called withdrawal. Repeated withdrawal episodes predispose to

increased severity of these symptoms called Kindling. This may in turn lead to increased relapse risk to alcohol related brain damage and cognitive impairment (Adhiyaman *et al.*, 2002).

The definitions of dependence and tolerance are given in table 1 (including the differences in definitions as per DSM IV and DSM V.)

Table 1: DSM IV and DSM V criteria for alcohol dependence, tolerance and withdrawal (NIAAA, 2013)

A Comparison Between DSM-IV and DSM-5

DSM-IV		DSM-5		
Any 1 = ALCOHOL ABUSE	Recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to alcohol use; alcohol-related absences, suspensions, or expulsions from school; neglect of children or household.	1	Alcohol is often taken in larger amounts or over a longer period than was intended. (See DSM-IV, criterion 7.)	The presence of at least 2 of these symptoms indicates an **Alcohol Use Disorder (AUD).** The severity of the AUD is defined as: **Mild:** The presence of 2 to 3 symptoms **Moderate:** The presence of 4 to 5 symptoms **Severe:** The presence of 6 or more symptoms
	Recurrent alcohol use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by alcohol abuse).	2	There is a persistent desire or unsuccessful efforts to cut down or control alcohol use. (See DSM-IV, criterion 8.)	
	Recurrent alcohol-related legal problems (e.g., arrests for alcohol-related disorderly conduct). ****This is not included in DSM-5****	3	A great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects. (See DSM-IV, criterion 9.)	
	Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the alcohol (e.g., arguments with spouse about the consequences of intoxication, physical fights).	4	Craving, or a strong desire or urge to use alcohol. ****This is new to DSM-5****	
Any 3 = ALCOHOL DEPENDENCE	Tolerance, as defined by either of the following: a) A need for markedly increased amounts of alcohol to achieve intoxication or desired effect b) Markedly diminished effect with continued use of the same amount of alcohol	5	Recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home. (See DSM-IV, criterion 1.)	
	Withdrawal, as manifested by either of the following: a) The characteristic withdrawal syndrome for alcohol b) Alcohol is taken to relieve or avoid withdrawal symptoms	6	Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol. (See DSM-IV, criterion 4.)	
	Alcohol is often taken in larger amounts or over a longer period than was intended.	7	Important social, occupational, or recreational activities are given up or reduced because of alcohol use. (See DSM-IV, criterion 10.)	
	There is a persistent desire or unsuccessful efforts to cut down or control alcohol use.	8	Recurrent alcohol use in situations in which it is physically hazardous. (See DSM-IV, criterion 2.)	
	A great deal of time is spent in activities necessary to obtain alcohol (e.g., driving long distances), use alcohol, or recover from its effects.	9	Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol. (See DSM-IV, criterion 11.)	
	Important social, occupational, or recreational activities are given up or reduced because of alcohol use.	10	Tolerance, as defined by either of the following: a) A need for markedly increased amounts of alcohol to achieve intoxication or desired effect b) A markedly diminished effect with continued use of the same amount of alcohol (See DSM-IV, criterion 5.)	
	Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., continued drinking despite recognition that an ulcer was made worse by alcohol consumption).	11	Withdrawal, as manifested by either of the following: a) The characteristic withdrawal syndrome for alcohol (refer to criteria A and B of the criteria set for alcohol withdrawal) b) Alcohol (or a closely related substance, such as a benzodiazepine) is taken to relieve or avoid withdrawal symptoms. (See DSM-IV, criterion 6.)	

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Relapse is regaining the full dependent state after a period of abstinence. For reasons unknown, the relapse takes a much shorter time to reach the dependent state which initially took a long time to develop. Thus, a syndrome which had taken many years to develop can be fully reinstated within perhaps a few hours of drinking. Studies have shown that a rat given a series of exposures to alcohol will show reinstatement phenomena[10]

The Relapse Prevention model proposed by Marlatt and Gordon suggests that both immediate determinants (e.g., high-risk situations, coping skills, outcome expectancies, and the abstinence violation effect) and covert antecedents (e.g., lifestyle factors and urges and cravings) can contribute to relapse (Marlatt and Gordon, 1980).

3. Complications of alcoholism:

The whole set of complications can be described as in table 2. The important and far more commonly encountered ones are discussed below:

Table 2: Complications of Alcoholism (Alderazi and Brett, 2007)

1. Developing nervous system
   - Foetal alcohol syndrome
2. Developed nervous system
   - Direct effects
     - Acute
       - Memory loss
       - Trauma
     - Chronic
       - Withdrawal
       - Cerebral atrophy
       - Dementia
       - Cerebellar degeneration
       - Central pontine myelinolysis
       - Marchiafava–Bignami disease
       - Morel's laminar sclerosis
       - Hepatocerebral degeneration
       - Neuropathy and myopathy
   - Indirect effects—nutritional
     - Wernicke–Korsakoff psychosis (thiamine deficiency)
     - Alcoholic pellagra (niacin deficiency)
     - Toxic polyneuropathy
     - Optic neuropathy ('tobacco alcohol amblyopia')

a. **Memory:** These are often described as blackouts. There are two types of blackouts viz. En Bloc and Fragmentary. En Bloc blackouts are momentary and irrecollectable memory loss experienced during the period of alcohol consumption as seen in this patient. Fragmentary type is a milder version.

Though these were initially described in alcohol dependents, it can also occur in social drinkers (White, 2003; Knight *et al.,* 1999).

➥In rats, there has been evidence of suppression of pyramidal CA-1 cells (which play a major role in memory formation) in a dose dependent manner similar to these blackouts (Alderazi and Brett, 2007).

➥These blackouts are hypothesized to be because of blockade of NMDA receptors causing interruption of Long Term Potentiation (LTP) required to convert short term memory into long term memory (Alderazi and Brett, 2007).

b. **Trauma:** is mainly because of confusion, ataxia, social disinhibition and aggression which may lead to falls, fights, road traffic accidents and suicidal tendencies (Savola *et al.,* 2005).

Falls are the major causes of subdural hematomas (Savola *et al.*, 2005) as seen in our patient.

Dopaminergic dysfunction has been linked to suicidal behavior (Sher, 2006).

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Literature wise, Shakespeare has beautifully described alcohol as, it provoketh the desire, but takethaway the performance.

This patient had a good insight and voluntarily wanted to quit alcohol. The patient was stabilized till fit enough to discharge from the neurosurgery department. He was closely followed up by psychotherapy, behavioral therapy, antabuse and tapering doses of anti-seizure medications. He was also referred to Alcoholics Anonymous (AA). Thus, as described earlier, the drug therapy controlled his secondary motivation and antabuse, behavioral and group therapy with AA were instituted for his primary motivation. He is today 3 months sober with proper follow up.

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