Review Article

TRENDS AND ISSUES IN RELATION TO ALCOHOL DEPENDENCE IN THE ARMED FORCES

Col MSVK RAJU*, Lt Col S CHAUDHURY*,
Col S SUDARSANAN#, Lt Col SK SALUJHA**,
Ms KALPANA SRIVASTAVA⁺⁺

ABSTRACT

Alcohol dependence syndrome has an estimated prevalence of 15.33% of all psychiatric hospitalizations in a year. There is an increasing trend in incidence among JCOs/ORs. The index of admission was highest in Armoured Corps, Mechanized Infantry and Army Medical Corps (AMC). Generally a service personnel becomes dependent at 35 years of age after about 11 years of drinking. The average consumption of alcohol dependent individuals was 6-7 pegs/day. A family history of alcohol abuse/dependence was found in 31% cases. Alcoholics had high anxiety, depression, extroversion, neuroticism and psychopathic deviate traits. Alcoholism was associated with significantly low self esteem. Significantly more alcoholics were alexithymic as compared to non-alcoholics. The γ glutamyl transferase (GGT) and mean corpuscular volume (MCV) were found to be useful diagnostic aids for alcoholism. Almost a third of alcoholics have potentially serious physical problems, 20% suffer from various degrees of psychotic phenomena, 40-55% have significant marital, occupational and disciplinary problems, while 3-6.93% attempted deliberate self-harm. Despite wide variations in mode of disposal, after diagnosis only a small percentage of alcoholics remain in service beyond three years. There is need for concerted investigations into the precipitating and perpetuating factors, co-morbidity, the process of change towards betterment and the long-term outcome of alcoholism in service personnel.

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KEY WORDS : Alcohol dependence syndrome; Outcome; Personality; Prevalence.

Introduction

The history of the world would have been different had alcohol not entered the battlefield. Alexander succeeded in several battles but succumbed to the bottle. Bacchanalia brought the end of Khagan Chengiz Khan. The Pearl Harbour débâcle was attributed to the alcoholic excesses of American soldiers. Since World War II, alcohol abuse has been a problem for US forces. An estimated 84% of all US military personnel drink alcohol, approximately 12% drink more than 3.5 ounces a day, and 34% felt that alcohol had reduced their work performance [1].

Alcohol in India

India has always been described as an abstinent culture by the uninformed. In actuality, alcohol use is fairly widespread and social attitudes are more ambivalent than negative. The Rig-Veda and the Yajurveda mention "sura", a distilled spirit, which was consumed by the Kshatriyas (warriors). The despot Alauddin Khilji was the only monarch who tried to suppress drinking in the 14th century without much success. All the Moghul emperors, as also Maharaja Ranjit Singh drank heavily [2]. Despite being incorpo-

rated in the directive principles of the Constitution, most of the states failed to persist with their prohibition policies as excise was important revenue and the state machinery had no foolproof answer to human ingenuity and thirst for drink.

The Indian soldier and alcohol

A soldier is the product of the land of his birth. Thus the Indian soldier has to live down the historical and current ambivalent attitudes in relation to alcohol. The Armed Forces have inherited the modern version of organized mess drinking from the British. In the Army drinking is a social ritual. The "barakhana" and the bonhomie of 26th January and 15th August are enduring traditions. Air Force and Navy also have their own distinct traditions of drinking.

The problem that the Armed Forces face in respect to the use of alcohol lies in the fact that alcohol helps the morale of those who are accustomed to use it, but impairs the efficiency of all those who use it. The relationship, however, is not all that simple since morale aids efficiency and in the long run efficiency helps to build up confidence and morale. A considerable gain in morale is worth a small loss in efficiency.

*Senior Advisor (Psychiatry), Base Hospital, Delhi Cantt-110 010, **Reader (Psychiatry), **Scientist 'D' (Psychiatry), #Professor and Head, Department of Psychiatry, Armed Forces Medical College, Pune - 411 040.

A man who has drunk too much may conceivably rally his maximal efficiency for a supreme moment, but he will not be able to sustain the level of effectiveness [3]. The Indian Army is almost continuously engaged in Counter-Insurgency operations. Further, the Indian soldier, like his counterparts in other developing countries, has a role in nation building besides that of guarding the boundaries of the nation. This calls for sustained effectiveness [3]. It is here that the role of leadership becomes important. In the Armed Forces leadership goes down the line. Every man up to Lance Naik is a leader and all the other men are at least potential Lance Naiks.

Psychology of alcoholism

The initial effect of alcohol is relaxation. But relaxation at a time when alertness is the need may put men and mission at serious jeopardy. By making people warm at the cost of losing heat, by lulling visual and hearing acuity, it compounds a soldier's disadvantage further. Under the influence of alcohol, a person's discrimination becomes less accurate and his judgement becomes less valid. Worst of all, it impairs and interferes with self-criticism. He gains not in courage but in foolhardiness. A foolish soldier is not only his worst enemy but that of his unit too [3].

Extent of drinking and dependence

The exact prevalence and proportions of officers and men in the Armed Forces who drink alcohol is not known. Utilizing estimates for the civil population [2,4], one can arrive at a rough approximation of 125,000. Available health statistics show that about 600 new cases of alcoholism are hospitalized every year. Singh [5] and Chatterjee [6] recorded 0.6% and 5% prevalence of alcoholism amongst all psychiatric admissions during one year. Raju et al [7] calculated a prevalence of 15.53% and incidence of 8.95% amongst all psychiatric admissions of one year. This corresponds to Ramachandran's [4] estimate that in the general population 15-20% of all psychiatric admissions is alcohol-related. It is pertinent to note here that for every alcoholic patient in psychiatry ward there may be 10 cases in other wards of the same hospital with various alcohol related disorders [5].

Dimensions of alcohol dependence

Alcohol dependence constitutes only a small part of the total alcohol related problems. A closer study of the problem will carry an interested observer across issues ranging from stability of families, genetic endowment, personality attributes, interpersonal relationships, leadership, discipline, motivation, adjustment

and environmental stress to the more mundane matters of duration and pattern of drinking, parent service and regiment, rank structure and alcohol related disabilities. All the above aspects have not yet been adequately investigated in the Armed Forces. Research in this area has been sparse and sporadic. Bhattacharyya et al [8] studied 204 new cases of alcoholism from all over India during 1977-79 by means of a postal inquiry. Saldhana and Goel [9] made a retrospective analysis of 115 new cases from case documents at Command Hospital (Western Command) in 1998-1990. Chaudhury et al [10] prospectively studied 100 consecutive new alcohol dependence cases during 1990-1992 at 151 Base Hospital. Raju et al [7] analysed 106 new and 67 old cases of alcoholism admitted to Command Hospital (Southern Command) during a two year period. A comparative analysis of the data may enable one to draw some useful conclusions.

Distribution in the services

Though there is a discernible declining trend, prevalence of alcoholism in Air Force continues to be high (Table-1). Unfortunately, there is an increasing trend in the Army, which cannot be attributed entirely to decreasing invalidments. Health report of the Army for 1996 also mentions of increase in incidence over figures of 1995. There is perhaps a declining trend in the Navy, but data from a psychiatric center of the Navy revealed almost 100% increase of new admissions in 1995 compared to 1987 figures. A correct picture can emerge only after a comprehensive analysis of pooled data from the three services.

Rank wise distribution

Despite a significant decrease in the incidence of alcoholism amongst officers over the years, officers as a class still find high representation among alcoholics (Table-1). Absence of officers in the sample of Saldhana and Goel [9] is rather inexplicable. There is a trend towards increase in incidence in JCOs/ORs. It has been found recently that low response to alcohol challenge at 20 years is predictive of alcoholism at age of 30. Electrophysiological studies revealed a decrease in the power alpha range and reduced amplitude of P300 wave in the sons of alcoholic men [11]. The feasibility of utilizing these findings at the time of selection especially of that of the officers needs to be explored.

Distribution as per religion

Alcohol is a great leveller and truly secular fluid. Obviously prescriptions are no deterrence to any religious denomination. There is a trend towards increase

TABLE 1
Demographic background of alcohol dependent subjects (all figures in percentage)

Variables	Bhattacharyya et al (n=204)	Saldhana & Goel (n=115)	Chaudhury et al (n=100)	Raju et al (n=173)
Source of sample	All India	Western & Northern Command	Eastern Command	Southern Command
Service				
Army	55.82	63.48	69	69.36
Air Force	32.35	20.8	8	17.34
Navy	11.76	-	-	6.35
GREF	-	14.78	23	-
Rank				
Officer	22.06	-	4	10.40
JCO	14.71	8.69	12	13.8
NCO	63.24*	66.08	47	54.33
Sepoy	-	25.2	37	21.38**
Religion				
Hindu	67.65	-	79	92.48
Sikh	14.70	-	14	3.47
Christian	17.65	-	5	2.31
Muslim	-	-	2	1.73
Marital status				
Married	85.29	-	93	-
Unmarried	13.24	-	7	-
Widower	1.47	-	-	-

*NCOs and sepoys clubbed together; ** 12.21% of the OR are tradesmen

in the prevalence of alcohol dependence among Hindus (Table-1). This could either be due to actual increase in the intake of alcohol in them or due to a decrease of intake among minority groups. This aspect will need an analysis of overall figures from the country and a detailed study to assess if there is a change in attitude towards alcohol in the minority groups.

Index of admission Regiment and Corps

The proportional representation of various Arms and Services among alcoholics is not known. In two studies 52% [7] and 60% [9] of cases belonged to Arms. The high index of incidence in Armoured Corps, Mechanized Infantry and AMC is significant (Table-2). This may be attributed partly to the disposition of troops in the catchment area. The low index of admission in Infantry, Artillery and Engineers is noteworthy. This may be a reflection of the quality of leadership and high levels of tolerance and discipline in these regiments.

Characteristics of Alcohol Dependent subjects

It can be seen that generally a person becomes dependent at the age of 35 years after about 11 years of drinking an average of 6-7 pegs of spirit daily (Table-3). Consumption of large quantities of alcohol, obviously allowed or connived at by the immediate supe-

TABLE 2
Index of admissions - Regiments and Corps of Army

Regiment /Corps	Admission in percentage of total admission	Index of admissions*
Mech Infantry	6.67%	2.09%
Infantry	2.89%	0.09%
Armoured	10.00%	2.42%
Artillery	6.67%	0.49%
Engineers	2.50%	0.31%
Signals	10.83%	1.43%
AD	0.57%	0.15%
ASC	7.50%	0.97%
AMC	21.38%	4.28%
EME	10.00%	1.23%
Ordinance	1.67%	0.63%
Others	8.33%	-

* Index of admission is the product of admission in percentage and the actual strength in percentage in Army

riors, was positively correlated with dependence [12]. However, alcoholics are notorious at minimizing their drinking and actual intake may be even higher. Moreover, psychiatrists are not meticulous in documenting the drinking pattern of each case. Raju et al [7] observed that only in 27% cases the quantity of drink consumed was mentioned. Family history of alcohol abuse/dependence was also not properly recorded.

TABLE 3

Characteristics of the alcohol dependent patients

Characteristic	Bhattacharyya et al (n=204)	Saldhana & Goel (n=115)	Chaudhury et al (n=100)	Raju et al (n=173)	Pawar et al (n=100)
Mean age in years	35.89	37.2	38.5	36.63*	37.9
Mean service in years	15.6	16.3	17.78	17.93**	-
Mean duration of consumption in years	11.00	10.00	14.70	11.70	12.72
Average daily consumption (in pegs)	7	-	7.14	5.92	5.87
Family history	30.88%	-	31%	4.04%	-

* Average age for sepoys is 29 years; ** For sepoys 9.45 years

Hence, a positive family history in 31% of cases, reported by Bhattacharya et al [8] and Chaudhury et al [10] can be taken as a true measure. This is in agreement with other studies [11]. In contrast to others, sepoys and their equivalents (excluding DSC) become dependent at the average age of 29 years after only 9.4 years of service. As sepoys constitute about 20-30% of the sample, it is possible that the alcoholic sepoys are a separate group with significant genetic component. It will be prudent to carry out a detailed study of this vital group.

Personality factors in Alcoholism

It is said that no alcoholic is a stable person even when sober [13]. As alcohol dependents constitute a miniscule percentage of drinkers it is reasonable to assume that some personality and environmental variables are playing a part. Bhattacharya et al [8] assessed 35.3% of their sample as introverts, 27.9% as extroverts, 26.5% as neurotic, 4.4% as immature and 2.9% each as psychopathic and inadequate. Since no standardized instruments were used, their conclusions cannot perhaps stand scientific scrutiny. Chatterjee [7] also found a good proportion of cases with introversion tendencies, which is in contrast to Tarter's view of emotionality, activity and temperamental tendencies underlying alcoholism [14]. Chaudhury et al observed that alcoholics obtained significantly higher scores on state and trait anxiety, depression, psychopathic deviation, neuroticism, extroversion and presumptive stressful life events. More alcoholics were identified as alexithymic. Alcoholics had significantly lower self-esteem as compared to normal subjects [10]. On the 16 Personality Factor test, alcoholics were more desurgent and group dependent [15]. However, due to cross-sectional design of these studies it cannot be stated with a degree of confidence that these personality attributes antedated the development of alcoholism.

Reasons for drinking

About 63.2% of patients reported drinking for a sense of well being, 27.2% to forget sorrows and only 9.5% to do more work [8]. Expectancy of positive outcome is observed to be leading to onset of drinking [16]. Hence, a vigorous educational program at Regimental centers and units to dispel the false notion of positive outcome combined with avoidance of public drinking may turn out to be powerful factors in primary prevention of alcoholism. Bhattacharya et al [8] found a lag period of about four years between onset of drinking and its regular consumption (enjoying drinks). Regular consumption and eventual dependence can be brought down even after the onset of drinking if concerted efforts are directed towards temperance during the lag period.

Alcohol related disabilities

Almost a third of alcoholics have potentially serious physical problems, while 20-21% suffer from various psychotic phenomena (Table-4). Health report of Army for the year 1995 mentions psychosis in only 10% of cases. Generally, delirium tremens is not recorded as a separate diagnosis, hence this condition is under-reported. Significant marital, occupational and disciplinary problems occur in 40-56% of alcoholics and this may perpetuate excessive drinking. Deliberate self-harm was attempted by 3-6.93% of alcoholics (Table-4). This is in correspondence with earlier studies [17]. Identifying these perpetuating factors is important as concerted efforts at counselling and problem solving at all levels might have a salutary effect.

Laboratory Assessment of alcoholism

Values of GGT, SGOT, SGPT [10] and MCV [10,18] were statistically significantly raised among alcoholics compared to normal controls, indicating their usefulness in diagnosis/follow-up. Statistically significant increase in incidence of ECG abnormalities (sinus tachycardia, intraventricular conduction defects,

TABLE 4
Alcohol related disabilities (all figures in percentages)

Disability	Raju et al (n=173)	Chaudhury et al (n=100)
Physical		
Fatty liver	15.02	11
Alcoholic hepatitis	9.25	4
Seizures	5.78	3
Injury	7.51	9
Hypertension	2.31	4
Psychosocial		
Hallucinations	4.04	6
Delirium tremens	10.40	10
Delusion + hallucination	6.93	4
Depression	4.62	11
Deliberate self-harm	6.93	3
Marital discord	9.25	13
AWL/OSL	14.45	-
Punishments	16.18	42*

* includes AWL/OSL; AWL - Absent without leave; OSL - Over stay of leave

TABLE 5
Disposals of alcohol dependent patients (Raju et al, 1997)

Medical category	Duration in months				
	6months	12months	18months	24months	>24 months
BEE/CEE	62	32	13	21	2
AYE	3	8	3	8	6
EEE	2	0	0	0	4
Release	0	8	0	0	4

T wave changes and prolonged QTc) were observed in alcoholics in the absence of overt cardiac disease [10].

Disposals

Only a small percentage of alcoholics remain in service beyond 3 years. Despite the low invalidment rate of 3.46%, attrition rates remain high for other reasons. Raju et al [7] found that 6.93% were released from service within two years of diagnosis (Table-5). Saldhana and Goel [9] quote an invalidment of 18.26% which is rather high. About 12% get upgraded to cat AYE within two years. This is an important group for investigation as indicators of positive outcome might emerge out of the study. There is a need to study the process of change towards betterment instead of focusing entirely on onset and relapse factors [19]. Effect of the new guidelines on disposal of alcoholism cases needs prospective evaluation.

Rising incidence of alcoholism

Analysis of hospitalization figures of psychiatric centres over the past 10 years reveals that the incidence of alcoholism is rising. In 1987 new cases of

alcoholism constituted 11.84% while in 1995 it was 20.90% of all new psychiatric cases. The proportion is increasing steadily despite the incidence of psychiatric cases generally showing a declining trend during the same period (Table-6). Paradoxically the incidence is rising in JCOs/ORs who are expected to be the beneficiaries of the program of cash payment in lieu of rum. Apparently, free issue of alcohol is not an important factor. The changing attitudes to drinking, stresses of society in transition, affordability of alcohol due to increased purchasing power and the unfortunate association of consumption of Indian Made Foreign Liquor with upward social mobility may be some of the factors contributing to this increasing trend.

TABLE 6
Rising incidence of alcoholism (Raju et al, 1997)

Year	Total psychiatric admissions	New cases of alcoholism			
		Total n (%)	Officers n (%)	Index	JCOs/ORs n (%) Index
1987	549	65 (11.84)	9 (1.64)	3.48	56 (10.20) 0.89
1991	844	114 (13.50)	16 (1.90)	3.81	98 (11.60) 0.89
1995	644	139 (20.90)	11 (1.60)	2.00	128 (19.27) 0.96

Treatment of Alcohol Dependence

Alcohol dependent patients are offered a package of detoxification, educational group therapy and counseling at service psychiatric centers. Good improvement was reported after electric aversion therapy [6], metronidazole and electric aversion [20], Agnihotra treatment [21] and yoga therapy [22]. All these studies were conducted on small samples and a follow-up of six months. These methods, however, did not find favour with many of the psychiatrists. Though the outcome of treatment with disulfiram [23] was reported to be encouraging, due to adverse effects it is not recommended. In Raju et al's sample there were 12 cases on disulfiram [7]. Some of them were continuing to drink. Like in any other psychopharmacologic intervention compliance to therapy is a big stumbling block in the treatment of alcoholism. Relapse prevention with Fluoxetine is a recent phenomenon and deserves a multicentric trial along with the existing therapeutic package. If post-treatment length of service is taken as an outcome measure [24] then the results of treatment at present are unsatisfactory. It is believed that alcoholics improve after retirement or release from service. This impression is subject to scientific validation. Alcoholism rate in military retirees is reported to fall to that of general population level [25]. Military psychiatrists have not yet studied this aspect. Data from Resurvey Medical Boards conducted at various psy-

chiatric centers can be collected as a first step to draw some preliminary conclusions.

Conclusions

Alcohol dependence constitutes a significant proportion of all psychiatric admissions and forms a major workload of all psychiatric centres. These cases have high prevalence of alcohol-related physical, occupational, disciplinary and social problems and place considerable demands on unit and medical resources. Concerted investigations are urgently needed to identify predisposing, precipitating and perpetuating factors as well as the outcome of various therapeutic modalities in our setting. Furthermore, alcohol abuse and dependence are regarded as significant co-morbid conditions of other primary psychiatric disorders. We have very little information on co-morbid alcoholism.

Psychiatrists will have to meticulously document relevant biographical, clinical and investigatory findings, so that a corpus of data is available for appropriate and useful action. Health administrators will have to liaise and collaborate with the psychiatrists to draw relevant conclusions and utilize the same for the good of our clientele. Mental health is too serious business to be left entirely to the psychiatrists.

Experience down the ages tells us that abstinence from alcohol is a utopian ideal. As it is anywhere else, use of alcohol can never be stopped in the Armed Forces. Forced abstinence may bring in unhealthy practices and may work against group cohesion and discipline. Intelligent use of liquor can be a morale multiplier and great unifier of command. It is upto the commanders to follow Charak's dictum and ensure that it is taken in right quantities, in right manner, at right time, so that its consumption does not lead to dependence, disablement and degeneration of military discipline.

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