Aim: To assess the levels of alcohol consumption and the level of stress faced by male patients hospitalized with psychiatric disorders in a military hospital.

Materials and Methods: This cross-sectional study was conducted on 100 consecutive patients admitted to a tertiary care psychiatric center and 100 controls. The patients with psychiatric ailments were first stabilized mentally and physically and then assessed. For the collection of demographic data, a questionnaire was prepared which was administered to all patients. The Armed Forces Medical College Life Events scale was used for the assessment of stressful life events. The Michigan Alcohol Screening Test (MAST) was applied as a screening procedure for alcohol use disorder. For assessing the severity of alcohol consumption, the Hilton Drinking Behavior Questionnaire (HDBQ) was utilized. Results: Analysis revealed that 16% of the psychiatric patients scored above the cutoff score on the MAST compared to 2% of controls. On the HDBQ, 22% of the psychiatric patients had a significant score compared to 4% of controls. Patients with psychiatric disorders experienced significantly more number of life events compared to the controls irrespective of the length of service. The Psychiatric group experienced significantly more life change units both in 1-year prior and in lifetime period. Conclusion: Psychiatric patients face significantly higher stressful life events, experience significantly more life changes, and consume significantly more alcohol compared to healthy participants.

Keywords: Alcohol consumption, life event stress, psychiatric disorders

Consumption and abuse of alcohol have been known to all societies in the world since ancient times. In India, alcohol beverages were known since the Vedic period. The World Health Organization examined mental disorders in primary care in 18 countries utilizing the composite international diagnostic interview and found that alcohol dependence or harmful use was present in 6% of patients. In India, many studies have been carried out with regard to the levels of alcohol consumption. The maximum use of alcohol is found in skilled, semi-skilled, and unskilled workers with figures of 68%, 74.2%, and 82.5%, respectively. Unfavorable psychosocial factors, which can produce further stress, are isolation, monotony, low pay, the pressure to increase output, and lack of career opportunities which may contribute to poor morale and psychological disturbances. This in turn may lead to alcohol use, as employers as well as employees attempt to compensate for tensions.

“Stress” often is used to describe the subjective feeling of pressure or tension in response to an internal or external stressor. Stressful life events have been consistently reported as a precipitating factor for psychiatric disorders. A recent community-based study reported that in the year before onset of the first psychiatric disorder significantly more patients reported at least one severe event compared to nonpatients (35.8% vs. 12.2%; odds ratio = 4.0, 95% confidence interval = 2.3–7.1). It has been hypothesized that alcohol may serve as a coping mechanism against stress, and therefore people drink to cope with stress. Stressful life events and chronic stressors have been correlated with

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How to cite this article: Saha A, Chaudhury S, Saldanha D, Srivastava K. Stressful life events and severity of alcohol consumption in male psychiatric inpatients. Ind Psychiatry J 2017;26:13-8.
excessive alcohol consumption and alcohol dependence. Studies on a group of men who completed inpatient alcoholism treatment and later experienced severe and prolonged psychosocial stress revealed that participants who relapsed experienced twice as much severe and prolonged stress before their return to drinking as those who remained abstinent. Thus, stressful events may be major contributors to the initiation and continuation of addiction to alcohol as well as to relapse or a return to use after periods of abstinence.

Traditionally, in the military, alcohol has been used to cope with the intense stress of combat operations. However, the use of alcohol in the military has divided medical opinion. Some doctors claim that alcohol has an important role in uplifting morale, improving unit cohesion, and shielding soldiers from adjustment disorders whereas others highlight the adverse effects of alcohol on health as well as social and occupational function. In US army personnel, the prevalence of heavy alcohol use has increased significantly between 1998 (15%) and 2008 (20%). Heavy drinking in the UK armed forces was associated with lower rank, younger age, being a smoker, unmarried, not having children, serving in a combat role, and a parental history of substance abuse or dependence. A recent Indian study also observed that alcohol consumption was consistently related to perceived stress.

There is a paucity of Indian studies assessing stressful life events and alcohol use in military personnel with psychiatric disorders. Hence, this study was undertaken to determine whether there exists a relation between the levels of alcohol consumption and the level of stress faced by service personnel with psychiatric disorders.

**MATERIALS AND METHODS**

This hospital-based cross-sectional study was carried out in a general hospital psychiatry unit of a large teaching hospital. The unit provided both inpatient and outpatient care. The facility for inpatient care in the psychiatric unit was restricted to males only. The study protocol was approved by the Institutional Ethical Committee and all the participants included in the study gave informed consent. The study group consisted of 100 consecutive patients admitted to the psychiatric center. An equal number of service personnel matched for age, sex, and background without any physical or psychiatric illness formed the control group.

**Tools**

**Sociodemographic and clinical data sheet**

A specially designed sociodemographic and clinical data sheet including age, education, marital status, duration of service, punishments, family history of alcoholism, duration of drinking, and withdrawal symptoms were prepared for the study.

**Armed Forces Medical College life events scale**

This 52-item scale has been constructed to measure stressful life events in Indian service personnel. Reliability and validity of the scale is established. The Armed Forces Medical College life events scale (AFMC LES) was used for the assessment of life events 1 year before the onset of said disease and in the entire lifetime.

**Michigan Alcohol Screening Test**

The Michigan Alcohol Screening Test (MAST) is one of the most widely used measures for assessing alcohol abuse. The measure is a 25-item questionnaire designed to provide a rapid and effective screening for lifetime alcohol-related problems and alcoholism. The questions are answered in a yes/no format. Each question has a weightage ranging from 1 to 5. Total score was calculated by adding score of each individual item. The MAST has been productively used in a variety of settings with varied populations.

**The Hilton Drinking Behavior Questionnaire**

The Hilton Drinking Behavior Questionnaire (HDBQ) which consists of 34 pertinent questions was applied for assessing the severity of alcohol consumption.

**Procedure**

The patients and controls were initially interviewed, and the purpose of the study was explained to them. They were assured of full confidentiality about information given in the questionnaire. After obtaining written informed consent, the sociodemographic and clinical data sheet was filled up. Thereafter, the AFMC LES, MAST, and HDBQ were applied. In the patients with psychiatric ailments, they were first stabilized mentally and physically and then assessed.

**Statistical analysis**

The data obtained were analyzed using Mann–Whitney U-test for discrete variables and Chi-square test for frequency data.

**RESULTS**

In the present study, 100 psychiatric patients were taken and data collected pertaining to the study. The psychiatric patients comprised of schizophrenia and other psychoses (n = 21), mood disorders (n = 14), neurotic disorders (n = 35), alcohol dependence (n = 27), and sexual disorders (n = 3). This was compared with the data collected from the matched control group. Demographic and clinical characteristics of the psychiatric patients and matched
controls are shown in Table 1. Age of the study population ranged from 20 to 59 years. The majority of the study group belonged to the age groups between 30 and 39 years. There was no significant difference in age distribution of the two groups [Table 1]. As it is evident from the table, 72% of the psychiatric case population and 75% of the control populations were married. The distribution between both groups, however, was not statistically significant. The majority of the participants were Hindus. The Sikhs were the second most common group studied in the population. The distribution between both groups, however, was not statistically significant. The literacy status was divided into below matric and above matric groups. The minimum educational standard was illiteracy and

| Characteristics                           | Psychiatric cases (n=100) | Control (n=100) | χ²   | P         |
|-------------------------------------------|--------------------------|----------------|------|-----------|
| Age distribution (years)                  |                          |                |      |           |
| 20-29                                     | 14                       | 17             | 0.92 | >0.820 (NS) |
| 30-39                                     | 49                       | 52             |      |           |
| 40-49                                     | 27                       | 23             |      |           |
| 50-59                                     | 10                       | 8              |      |           |
| Marital status                            |                          |                |      |           |
| Married                                   | 72                       | 75             | 0.23 | >0.630 (NS) |
| Unmarried                                 | 28                       | 25             |      |           |
| Religion                                  |                          |                |      |           |
| Hindu                                     | 72                       | 81             | 2.32 | >0.508 (NS) |
| Sikh                                      | 23                       | 16             |      |           |
| Christian                                 | 3                        | 2              |      |           |
| Muslim                                    | 2                        | 1              |      |           |
| Education                                 |                          |                |      |           |
| ≥10th standard                            | 64                       | 67             | 0.20 | >0.655 (NS) |
| <10th standard                            | 36                       | 33             |      |           |
| Service (years)                           |                          |                |      |           |
| 0-10                                      | 14                       | 20             | 1.66 | >0.436 (NS) |
| 11-20                                     | 69                       | 61             |      |           |
| 21-30                                     | 17                       | 19             |      |           |
| Resident of                               |                          |                |      |           |
| North India                               | 38                       | 32             | 2.34 | >0.79 (NS) |
| South India                               | 37                       | 25             |      |           |
| East India                                | 12                       | 9              |      |           |
| West India                                | 23                       | 34             |      |           |
| Family history of alcoholism              |                          |                |      |           |
| Present                                   | 37                       | 16             | 11.32| <0.0007 (S) |
| Absent                                    | 63                       | 84             |      |           |
| Duration of drinking (years)              |                          |                |      |           |
| <5                                        | 13                       | 82             | 98.7 | <0.000 (S) |
| 5-10                                      | 24                       | 10             |      |           |
| 10-15                                     | 47                       | 5              |      |           |
| >15                                       | 16                       | 3              |      |           |
| Punishment                                |                          |                |      |           |
| Present                                   | 46                       | 13             | 26.18| <0.05 (S)  |
| Absent                                    | 54                       | 87             |      |           |
| Withdrawal features                       |                          |                |      |           |
| Tremors                                   | 21                       | 1              |      |           |
| Seizures                                  | 1                        | 0              |      |           |
| Delirium tremens                          | 3                        | 0              |      |           |
| MAST score                                |                          |                |      |           |
| ≥5                                        | 16                       | 2              | 11.97| <0.005 (S) |
| <5                                        | 84                       | 98             |      |           |
| HDBQ score                                |                          |                |      |           |
| Showing dependence                        | 22                       | 4              | 14.32| <0.005 (S) |
| Not showing dependence                    | 78                       | 96             |      |           |

NS – Not significant; HDBQ – Hilton Drinking Behavior Questionnaire; MAST – Michigan Alcohol Screening Test; S – Significant
The observations revealed that a strong family history of alcoholism was present in the psychiatric group, which was statistically significant. The duration of drinking in the two groups did show a significant difference. It was noted that the psychiatric patients had significantly larger number of individuals resorting to chronic alcohol use [Table 1] for the period >5 years (87 vs. 18; Chi-square value = 92.71; \( P < 0.0001 \)), >10 years (63 vs. 8; Chi-square value = 63.681; \( P < 0.0001 \)), and >15 years (16 vs. 3; Chi-square value = 8.375; \( P < 0.0038 \)). The psychiatric patients had received significantly more punishments compared to the control group. Both the MAST and HDBQ identified significantly more psychiatric patients as having alcohol dependence.

Distribution of the study population according to the life events experienced by them over the past 1 year and rest of their lives is shown in Table 2. As it is evident from the table, difference was statistically significant when the two groups were compared to each other for the number of life events as well as life change units (LCUs), both in the past 1 year and in lifetime. The difference in life events in the two groups was seen in the various age groups, length of service, and marital status [Table 3].

**DISCUSSION**

Our knowledge about the epidemiological, etiological, and therapeutic aspects of alcohol use and psychiatric disorders has advanced significantly in the last couple of decades. Many studies have been done on the relationship that exists between the severity of alcohol use and the level of stress that the individual faces. The fact that there may be several dimensions to the issue has been highlighted by many workers. In the Indian context and scenario, few studies have been carried out in this particular domain in security forces.

This study had certain improvements over the previous studies done. To collect the stressful life event data, a scale prepared exclusively for the armed forces personnel was used. This was a distinct improvement to the other studies. The sociodemographic variables between the patient sample and control samples were matched statistically in number, sex, age, marital status, and literacy status.

In the present study, the majority of people who consumed alcohol in the psychiatric patient group were <40 years of age (\( n = 63 \)) which is in agreement with earlier studies.\(^{19,20}\) More than 15 years of service was noted among 59.26% of alcoholics which is in keeping with the previous studies.\(^{20-23}\)

A substantial proportion of cases in the psychiatric case group, especially those who were alcohol dependent were found to have a positive family history. Among the psychiatric patients, 21% were noted have symptoms of alcohol withdrawal at the time of admission though only a small proportion of cases (4%) had complicated

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**Table 2: Life events and life change units involving the psychiatric cases and controls**

|       | Period | Mean (SD) | Control | P-level |
|-------|--------|-----------|---------|---------|
| Life events | 1 year | Prior to 1 year | | | |
| | Psychiatric cases | Control |
| | 4.87 (3.93) | 4.16 (3.65) | <0.05 (S) |
| | 13.45 (5.58) | 8.35 (4.83) | <0.05 (S) |
| Life change units | 1 year | Prior to 1 year | | | |
| | Psychiatric cases | Control |
| | 169.00 (19.20) | 118.26 (5.64) | <0.05 (S) |
| | 1352.69 (39.74) | 513.67 (13.88) | <0.05 (S) |

SD – Standard deviation; S – Significant; NS – Not significant

**Table 3: Life events and age, education, service and marital status involving the psychiatric case group and control group**

|       | Life events | Mean (SD) | Control | P-level |
|-------|-------------|-----------|---------|---------|
| Age group (years) | 20-29 | Prior to 1 year | | | |
| | Psychiatric patients | Control | |
| | 1 year | 7.04 (4.49) | 4.49 (4.12) | <0.05 (S) |
| | 9.78 (5.68) | 7.01 (4.48) | <0.05 (S) |
| | 30-39 | Prior to 1 year | | | |
| | Psychiatric patients | Control | |
| | 1 year | 5.94 (4.08) | 5.87 (4.78) | <0.05 (S) |
| | 10.75 (5.87) | 8.32 (5.48) | <0.05 (S) |
| | >40 | Prior to 1 year | | | |
| | Psychiatric patients | Control | |
| | 1 year | 6.82 (5.31) | 15.85 (5.32) | <0.05 (S) |
| | 17.54 (7.27) | 14.76 (5.76) | <0.05 (S) |
| Education | <10 class | Prior to 1 year | | | |
| | Psychiatric patients | Control | |
| | 1 year | 6.08 (4.94) | 7.55 (5.84) | >0.05 (NS) |
| | 10.52 (5.86) | 9.31 (5.41) | <0.05 (S) |
| Service | >10 years | Prior to 1 year | | | |
| | Psychiatric patients | Control | |
| | 1 year | 7.74 (5.99) | 3.85 (2.84) | <0.05 (S) |
| | 10.76 (6.17) | 7.57 (4.84) | <0.05 (S) |
| Marital status | Married | Prior to 1 year | | | |
| | Psychiatric patients | Control | |
| | 1 year | 4.87 (3.93) | 4.16 (3.65) | <0.05 (S) |
| | 13.45 (5.58) | 8.35 (4.83) | <0.05 (S) |
| Unmarried | Prior to 1 year | | | | |
| | Psychiatric patients | Control | |
| | 1 year | 7.91 (4.80) | 7.55 (4.95) | <0.05 (S) |
| | 8.93 (5.24) | 7.97 (5.02) | <0.05 (S) |
withdrawal in the form of seizures and delirium tremens. This reflects the high proportion of alcohol dependence patients in this group. However, despite the high proportion of alcohol dependence, the psychiatric patients as a group had a significantly longer duration of alcohol consumption compared to the normal controls. There was no significant difference between psychiatric patients and controls regarding educational level, marital status, hailing from different parts of India, religion, and field posting versus peace posting. The last finding is probably because in the security forces almost everyone has to do field and peace tenures alternately. The majority of the people in both the groups were married (72% psychiatric cases and 75% of controls). This is in agreement with an earlier Indian study on SF but is in contrast to another study where the married people constituted <20% of the sample.

The alcohol-dependent individuals in the psychiatric case groups were noted to have more punishments as compared to controls. This has been observed in a previous study. This may perpetuate excessive drinking. Schuckit in his masterly review has mentioned certain figures in relation to the legal problems that the alcoholics had, namely, demoted, dismissed, driving arrests, public intoxications, time in jail, and so on. More than half (51.85%) of the study group had been awarded punishments for various offences such as intoxication on duty and absent without leave. Punishments for comparable offences in Schuckit’s sample were quite high. In a retrospective Indian study of 173 alcohol-dependent personnel, a figure of 30.63% was quoted. The author admitted the figures may not be a true reflection of the actual state of affairs due to lack of proper documentation.

Psychiatric patients experience more events both in previous 1 year and also over their lifetime. The difference is statistically significant. This is in agreement with extensive evidence in the literature that demonstrates that life events stress may result in mental disorders. Earlier studies had concluded that persons experiencing more events are more likely to suffer from alcohol-related problems and that life events do play an important role in change of lifestyles and the present study is in conformity with those studies. A recent review concluded that stress is an important component in individual differences in risk for alcohol consumption and alcohol use disorders.

Analysis of the occurrence of life events in the different age groups revealed that the cases experienced more number of life events both in previous 1 year before to the onset of illness and in lifetime. It is evident from this that age has no role in influencing the occurrence of life events. The conclusion of the present study is in conformity with conclusion of earlier studies.

Analysis of life events with the duration of service in the population under study revealed that psychiatric patients with >10 years of service overall experienced more life events compared to control population with >10-year service. This finding is also in agreement with earlier studies.

Analysis of life events in terms of LCU experienced by both cases and controls, 1 year prior showed that the life events in terms of weight age were statistically significant for case group. The LCUs experienced by cases in their lifetime showed the psychiatric group to have maximum life events weightage as compared to other group under consideration. This finding is in agreement with earlier studies which have reported that prevalence of psychiatric disorders is strongly associated with exposure to stressors.

**Limitations**

The study had certain limitations. The sample size was modest, and all psychiatric patients were considered together. However, in the security forces, this is the first study using a scale designed for security forces. Future studies should include larger samples and analyze the patients of different psychiatric disorders separately.

**CONCLUSION**

It can be reasonably concluded from the study that the increased incidence of stressful life events may lead to an increased level of alcohol consumption in patients with psychiatric disorders.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

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