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# ALCOHOLISM AS THE MEDIATING FACTOR BETWEEN SUICIDE AND RISK FACTORS: A CASE CONTROL STUDY

Psychiatry

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## ABSTRACT

On the basis of epidemiological and clinical evidence, Alcohol dependence is known to increase the risk for suicidal ideation, suicide attempts and completed suicide. The study was done to identify the mediating role of alcoholism between suicide and risk factors for suicide. Between January and July 2018, a study was conducted in the Department of Psychiatry at Govt Theni Medical College Hospital. A total of thirty cases and thirty controls were recruited for the study. Following tools were used; Self innovated proforma to elicit the socio demographic data and circumstances regarding suicide attempt; Short term Alcohol dependence Data questionnaire; Beck's suicidal intent scale; Presumptive stressful life events scale; Hamilton Depression Rating scale; Mini mental status examination and ICD-10 classification of mental and behavioural disorders. Data were analysed using Pearson Chi-square test. Data were analysed using student independent t- Test. Correlation between life events, suicidal intent and depression were analysed using Pearson's correlation coefficient method. P value less than 0.05 was taken as significant. There is significant correlation between life events, suicide intent and depression. This paper discusses the findings from the study.

## KEYWORDS

Alcohol Dependence Syndrome , Suicide , Depression.

## INTRODUCTION

The association of Alcohol dependence with suicidal behaviour is well established although complex. On the basis of epidemiological and clinical evidence, Alcohol dependence is known to increase the risk for suicidal ideation, suicide attempts and completed suicide. However this risk is modulated by a wide variety of factors including socio demographic, clinical, treatment related and life situational characteristics as well as current drinking status and the effect of inebriation. The consequences of drinking can be physiological, psychological (suicide, depression), financial (poverty, indebtedness), or social (violence, marital breakdown, unemployment, legal problems). These problems also affects his family members and the community in which he lives.

Individuals show various stress - reactions, when the physical and psychological elements of events in life impose greater demand on him. These stress provoking events of life are generally termed as "Stressful Life Events". Among male alcoholics, life stress is connected with family discord and separations in all age groups. Other sources of stress are unemployment and financial troubles. Among female alcoholics, depression and adverse interpersonal life events are more frequent causes of suicide attempts.

Fouquereau et al[1] (2003) said that stress may influence drinking when alternative resources are lacking, when alcohol is accessible, and when the individual believes that alcohol will help to reduce the stress. Jose et al (2000)[2] found that drinking appears to follow stress and that individuals differ in the amount of alcohol they consume in response to stress. The commonest life stressors being financial followed by job related stressors concluded by Deshpande et al (2003)[4].

Attempters had more alcohol related problems, experienced early antisocial difficulty, misused drugs and had first degree relatives suffering from alcoholism or affective disorder. Attempts had occurred amidst heavy drinking, life problems and mood swings.

Mechanisms have been postulated underlying intoxicated suicidal attempts. They are as follows: Abreactive suicide attempt in which the attempt is said to occur at the onset of drinking or at the time of rapid increase in the level of intoxication in the context of interpersonal interaction and the concomitant behaviour observed - explosive, aggressive, and hyperactivity. A depressive syndrome of chronic intoxication in which the attempts are based on Alcohol induced depression after prolonged period of drinking.

Hufford (2001)[11] said that acute effects of Alcohol intoxication act as proximal risk factors for suicidal behaviour. Mechanisms responsible for Alcohol's ability to increase the suicidal behaviour include Increase psychological distress, Increase Aggressiveness, Propel suicidal ideation into action through suicide-specific alcohol expectancies.

Quantity of drinking per drinking day was also significantly higher in those making a recent suicidal attempt. Buydens-Branchey et al (1989)[16] in their study on age of alcoholism onset and its relationship to psychopathology found that type 2 alcohol dependents as well as their father had been found to abuse alcohol at a younger age than type 1 patients.

The phenomenon of co-morbidity is now an object of serious study and is considered to be one of the most important advances in the field of psychiatric nosology. Co-morbidity in alcoholism is a predictor for assaultive behaviour, rehospitalisation, and increased consumption of psychiatric resources. Individuals with co-morbidity are more likely to experience severe impairment in social and occupational functioning. The co-morbid disorders typically follow a more severe course than single disorders and are less amenable to treatment.

Chaudhary et al (2003)[20] said that alcoholics have a greater risk for developing depression (33.3%) when compared to non-alcoholism (6.6%) and that socio demographic variables do not account for depression. Driessen et al (1998)[21] said that co-morbidity patterns were associated with the greatest risk for suicidal ideas. They underlined the importance of depression for the suicidal risk in alcohol-dependent patients, while alcoholism itself appears to be only a moderate risk factor.

The study was done to identify the mediating role of alcoholism between suicide and risk factors for suicide.

## METHODS

Between January and July 2018, a study was conducted in the Department of Psychiatry at Govt Theni Medical College Hospital. A total of thirty cases and thirty controls were recruited for the study. Cases were the persons attending the out patient clinic, patients in the ward, persons satisfying the criteria for Alcohol dependence according to ICD-10 classification. Persons who had indulged in any deliberate self-harm accompanied by an expression of intent to die after the onset of Alcohol use and aged eighteen years and above were included. Controls were the persons attending the outpatient clinic, patients in ward, persons satisfying the criteria for Alcohol dependence according to ICD-10.after matching with cases for age, marital status, but who had not indulged in any act of deliberate self-harm. Tools used; Standard proforma to elicit the socio demographic data and circumstances regarding suicide attempt; Short term Alcohol dependence Data questionnaire; Beck's suicidal intent scale; Presumptive stressful life events scale; Hamilton Depression Rating scale; Mini mental status examination.

A total of thirty cases and thirty controls that fulfilled the inclusion and exclusion criteria were recruited for the study. They were informed about the study and informed consent was obtained. The cases were matched with controls for age, and marital status. To assess the cognitive status MMSE was done. Data were analysed using Pearson Chi-square test. Quantitative data were given in mean and standard deviation. Data were analysed using student independent t- Test. Correlation between life events, suicidal intent and depression were analysed using Pearson's correlation coefficient method. p value less than 0.05 was taken as significant.

## RESULTS

**Table 1: Sociodemographic Characteristics of the Participants**

| Age group (Yrs.) | Cases | Controls | Chi- square | P value |
|---|---|---|---|---|
| 16-35 | 20 (66.7%) | 20 (66.7%) | x2 = 0.00 | 1.00 Not significant |
| 36-55 | 8 (26.7%) | 8 (26.7%) | | |
| >55 | 2 (6.7%) | 2 (6.7%) | | |
| **Marital Status** | | | | |
| Married | 24 (80.0%) | 24 (80.0%) | x2 = 0.00 | 1.00 Not significant |
| Unmarried | 5 (16.7%) | 5 (16.7%) | | |
| Divorced | 1 (3.3%) | 1 (3.3%) | | |
| **Educational status** | | | | |
| Illiterates | 9 (30.0%) | 4 (13.3%) | x2 = 11.67 | 0.009 significant |
| Primary school | 13 (43.3%) | 5 (16.7%) | | |
| High school | 7 (23.3%) | 16 (53.3%) | | |
| College | 1 (3.3%) | 5 (16.7%) | | |
| **Occupational status** | | | | |
| Employed | 27 (90.0%) | 25 (83.3%) | x2 = 0.58 | 0.44 Not significant |
| Unemployed | 3 (10.0%) | 5 (16.7%) | | |
| **Income** | | | | |
| <1500 | 13 (43.3%) | 11 (36.7%) | x2 = 0.29 | 0.86 Not significant |
| 1500-5000 | 15 (50.0%) | 17 (56.7%) | | |
| >5000 | 2 (6.7%) | 2 (6.7%) | | |
| **Domicile** | | | | |
| Urban | 27 (90.0%) | 29 (96.7%) | x2 = 1.07 | 0.31 Not significant |
| Rural | 3 (10.0%) | 1 (3.3%) | | |
| **Family system** | | | | |
| Joint | 18 (60.0%) | 9 (30.0%) | x2 = 5.45 | 0.02* significant |
| Nuclear | 12 (40.0%) | 21 (70.0%) | | |

**Table 2: Characteristics of Suicide Attempts**

| Time of attempt | Cases n=30 | Percentage |
|---|---|---|
| Morning | 11 | 36.7% |
| Afternoon | 5 | 16.7% |
| Evening | 6 | 20.0% |
| Night | 8 | 26.7% |
| **Place of attempt** | **Cases n=30** | **Percentage** |
| Home | 21 | 70.0% |
| Public place | 8 | 26.7% |
| Others home | 1 | 3.3% |
| **Attempt** | **Cases n=30** | **Percentage** |
| Under Influence | 27 | 90.0% |
| Not Under Influence | 3 | 10.0% |
| **Method of attempt** | **Cases n=30** | **Percentage** |
| Poisoning | 17 | 56.7 |
| Hanging | 13 | 43.0 |
| **Accessibility of the method** | **Cases n=30** | **Percentage** |
| Home | 19 | 63.3 |
| Procured | 11 | 36.7 |
| **Number of attempts** | **Cases n=30** | **Percentage** |
| Nil | 14 | 46.7% |
| One | 7 | 23.3% |
| Two | 6 | 20.0% |
| Thrice or above | 3 | 10.0% |

**Table 3: SADD and Life Events comparison between cases and controls**

| | Group | N | Mean | Std. Deviation | Student t test |
|---|---|---|---|---|---|
| SADD | Cases | 30 | 41.10 | 1.583 | t = 13.73 |
| | Controls | 30 | 32.30 | 3.131 | p = 0.001 significant |
| | **Group** | **N** | **Mean** | **Std. Deviation** | **Student t test** |
| Life events | Cases | 30 | 192.73 | 65.883 | t= 6.27 |
| | Controls | 30 | 69.23 | 39.069 | p = 0.001 significant |

**Table 4: Comparison of life event score and suicidal intent among cases**

| | Suicidal intent | N | Mean | Std. Deviation | Student t test |
|---|---|---|---|---|---|
| Life events | <24.17 | 13 | 157.85 | 57.464 | t = 2.82 |
| | >24.17 | 7 | 219.41 | 60.379 | p = 0.008 significant |

**Table 5: Comparison of depression among cases and controls**

| | GROUP | | | | $x^2$=38.57 | p = 0.001 significant |
|---|---|---|---|---|---|---|
| | Cases | | Control | | | |
| | n | % | n | % | | |
| Depression | 26 | 86.7% | 2 | 6.7% | | |
| No depression | 4 | 13.3% | 28 | 93.3% | | |

**Table 6 Correlation between life events, depression and suicide intent**

| | | Life events | Suicide intent | Depression |
|---|---|---|---|---|
| Life events | Pearson correlation | 1 | 0.381(*) | 0.295(*) |
| | Sig (2-tailed) | - | .038 | .02 |
| | N | 30 | 30 | 30 |
| Suicide intent | Pearson correlation | 0.381 (*) | 1 | 0.092 |
| | Sig (2-tailed) | .038 | - | 0.627 |
| | N | 30 | 30 | 30 |
| Depression | Pearson correlation | 0.295 (*) | 0.092 | 1 |
| | Sig (2-tailed) | .02 | 0.627 | - |
| | N | 30 | 30 | 30 |

Correlation is significant at the 0.05 level (2-tailed)

## DISCUSSION

The study revealed that there is positive relationship between stressful life events and suicide attempts in Alcohol dependents. There is positive relationship between depression and suicide attempts in Alcohol dependents. Higher degree of dependence is also a risk factor for suicide among male alcohol dependents. Stressful life events (family conflict, financial loss, unfulfilled commitments) have positive correlation with suicide attempts in alcohol dependent individuals and co – morbid depressive disorder is one of the major risk factor in this study When the life events are studied as a possible factor for attempted suicide, it is concluded from this study that cumulative stressful life events is significantly associated with suicidal attempters, as the study groups differed significantly for total presumptive life event scores. In our study we had also found that suicide attempters with severe stressors are more prone for depression and high suicide intent.

One of the key findings in this study is that depression is significantly related to suicidal attempt. Hence efforts must be taken to probe and establish the possible comorbidity of depression among alcohol dependents.

Treatment and management of patients with alcohol dependence and concomitant suicidal attempts is crucial, as is the recognition of these patients in emergency and other health care service contacts. The treatment strategies must be based on current knowledge of risk factors for suicidal behaviour efficacy of treatment for alcohol dependence or relevant co-morbid conditions and problems known to be common in treatment settings.

Hence the following principles are suggested in the management of alcohol dependent individuals:- (i) Suicidal threats or communication by alcohol-dependent individuals in emergency and other contacts should be viewed seriously. (ii) Possibility of comorbid depression should be well evaluated, a consequent treatment plan initiated and follow-up arranged. (iii) Appropriate pharmacological treatment should focus on reducing the amount of drinking. (iv) Known epidemiological and clinical risk factors, adverse life events in particular, should be recognised and taken into account.

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