

# Analysis of the Medicolegal Examination of Alcoholism among Various Occupational Groups

Medicolegal Examination of Alcoholism among Various Occupational Groups

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## ABSTRACT

**Objective:** The present study aimed to determine the frequency, various characteristics, and clinical findings of medicolegal cases of alcoholism.

**Study Design:** Retrospective analysis

**Place and Duration of Study:** This study was conducted at the Peoples Medical College Hospital, Nawabshah District, Shaheed Benazirabad from January, 2020 to December, 2021.

**Materials and Methods:** One hundred and ninety five cases of alcoholism were found in medicolegal records were enrolled.

**Results:** All of the cases were males and the majority of alcoholic cases was 31 to 30 years old (48.21%), belonged to religion Islam (92.82%) and rural locality (80.00%), had the occupation of shop keeping (55.38%), and was presented with disordered clothing (32.31%). The analysis of clinical findings revealed that most of the alcoholics had slurred (42.56%) and incoherent (31.79%) speech, had positive signs for finger nose test (~80%) and Romberg's sign (82.56%), were abusive (47.18%), and could not stand upright (48.20%).

**Conclusion:** The Muslim males of 21 to 30 years old from rural areas and having the occupation of managing a shop presented the largest proportion of medicolegal cases of alcoholism. The congestion of the eyes and impaired speech, attention, coordination and gait were found in the major portion of the sample.

**Key Words:** Medicolegal examination, Alcoholism, Occupational

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## INTRODUCTION

Alcohol is a psychoactive drug and is also utilized as an excipient in various medicinal and consumer products. The alcoholic drinks are usually available as beverages, contain ethyl alcohol (ethanol)<sup>1</sup>, and are consumed by man as one of most favourite recreational substances.<sup>2</sup> The absorption of ethanol is quite rapid from the mucosa of the stomach and small intestine leading to the peak blood concentration of ethanol within 30 to 90 minutes of ingestion.<sup>3</sup>

The passage of alcohol from the stomach to the duodenum is rapid in the fasting state as compared to the fed state resulting in further higher blood ethanol concentration in fasted individuals.<sup>4</sup> The use of alcohol has been identified as a major risk factor in increasing health burden by causing diseases and injury. For instance, the association of alcohol drinking has been associated with 50% of all deaths that were caused by liver cirrhosis.<sup>5</sup> The subsequent liver damage diminishes its capacity to metabolize the alcohol and consequently the alcohol intoxication is escalated.<sup>4</sup>

Alcohol intoxication is considered by medical and forensic practices as the most prevalent substance abuse that exerts the most common lethal effects on human beings.<sup>6</sup> The cases of alcohol drunkenness are most frequently presented to forensic/ Medicolegal sections of the hospital because of the strong link between alcohol usage and different types of criminal activities.<sup>2</sup> Alcohol drinking has also been linked with homicide, bodily harm, violent and aggressive behaviour, domestic violence, and sexual assaults.<sup>2,7</sup> Additionally, drunkenness impairs the consumers' ability to perform skilled tasks such as driving. A substantial portion (30%-50%) of deaths on the roads in European nations and the US involved the use of alcohol or drunken drivers.<sup>8</sup> The WHO introduced the global strategy to reduce the harmful use of alcohol and to increase the

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awareness about the magnitude of negative consequences on health, social and economy that are caused by alcohol abuse.<sup>9</sup>

Although the use of alcohol is prohibited in Pakistan by law, Enforcement of Hadd Order (4 of 1979), the crimes and road traffic accidents under influence of alcohol have been recently reported from the country.<sup>10,11</sup> Therefore, the current study aimed to determine the frequency and characteristics of the alcoholics that were presented to the Medicolegal section of Peoples Medical College Hospital, Nawabshah District Shaheed Benazirabad.

## MATERIALS AND METHODS

The study was conducted retrospectively at the Forensic Section of Peoples Medical College Hospital, Nawabshah District Shaheed Benazirabad. A proforma was designed for data collection and the data was collected from medicolegal reports that were recorded from 1<sup>st</sup> January 2020 to 31<sup>st</sup> December 2021. The ethical permission for the present study would be obtained from the Institutional Review Board of Peoples Medical University. The data was collected for various characteristics and clinical findings including age, gender, occupation, religion, locality, clothing, general disposition, muscular coordination, Romberg's sign, and Finger Nose Test. The collected data were descriptively analyzed by IBM SPSS Statistics for Windows, version 24.

## RESULTS

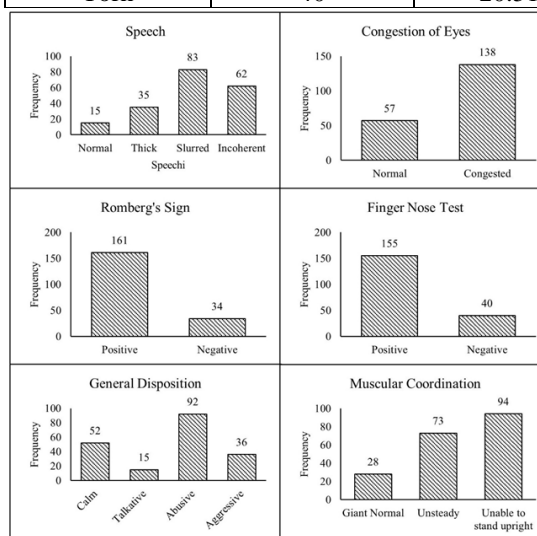
The frequency of various characteristics of alcoholism is given in Table 1. All of the cases were males mostly belonging to the age group of 21 to 30 years old (48.21%). The second highest frequency of age-wise distribution was seen for adults aged 31 to 40 years. The faith-wise distribution shows that majority of the alcoholics were Muslims (~93%). A higher number of alcoholic cases were presented from rural areas (80%) than from urban localities (20%). The occupation of shop keeping outnumbered any other occupation by contributing a proportion of 55.38%. The laborers and students presented second and third highest frequency, respectively, with a negligible difference. The clothing of a larger portion of alcoholics was disordered (32.31%) and soiled (26.67%). The clothing of about 21% of alcoholics was torn whereas only 8.72% of individuals were dressed decently.

The clinical findings of the alcoholics are presented in Fig. 1 which showed that the speech was slurred and incoherent for 42.56% and 31.79%, respectively. The normal speech was noted for only a small portion (~8%) of all cases. The Romberg's Sign and Finger Nose Test appeared positive for 161 and 155 individuals respectively. With reference to general disposition, the majority of alcoholics were abusive (47.18%). The second highest frequency in this regard

appeared normal whereas the smallest number of individuals were identified as talkative (~8%). The alcoholics were mostly unable to stand upright (48.20%) while unsteady muscular coordination was observed for 37.44% of drunk individuals. The alcohol intake was confirmed by laboratory testing in 85% of the cases.

**Table No.1: Different characteristics of medicolegal cases of alcoholism (n=195)**

Characteristics	No.	%
<b>Gender</b>		
Male	195	100.0
Female	-	-
<b>Age (years)</b>		
0 – 15	21	10.77
16 - 20	23	11.79
21 - 30	94	48.21
31 - 40	39	20.00
41 - 50	18	9.23
<b>Area</b>		
Rural	181	80.00
Urban	39	20.00
<b>Religion</b>		
Muslim	181	92.82
Non-Muslim	14	7.18
<b>Occupation</b>		
Student	29	14.78
Shopkeeper	108	55.38
Labourer	30	15.38
Landlord	9	4.62
Unknown	19	9.74
<b>Clothing</b>		
Decently	17	8.72
Dressed	23	11.79
Disordered	63	32.31
Soiled	52	26.67
Torn	40	20.51



**Figure No.1: Clinical findings**

## DISCUSSION

The findings of the present study reveal that males are more inclined towards alcohol intake. Similar gender distributions have been reported by Memon et al<sup>12</sup> and Aslam et al<sup>13</sup> from hospitals of neighbouring districts. A medicolegal study of alcohol intake in people of Quetta also found that majority of consumers were males (96.9%).<sup>14</sup> Similarly, an epidemiological study of alcohol intoxication found that alcohol intake was only related to the male gender.

The higher frequency of alcohol consumption by people aged 21 to 30 years is consistent with other studies. A study from Lahore reported the maximum number of medicolegal cases of alcoholism in the third decade of their life.<sup>11</sup> Mirza and Arif<sup>3</sup> studied the prevalence of acute alcoholism in three major public hospitals of Karachi and found that majority of alcoholics were aged between 26 and 35 years. Contrarily, Abbasi et al<sup>14</sup> found a higher prevalence of alcoholics at the age of 31 to 40 years. The variation may pertain to the difference in sample size between the two studies. The higher percentage of younger people in the current study may attribute to the probability of their increased involvement in evil for sake of their social company or to obtain pleasure from alcohol intake and then they consequently become addicted to alcohol.<sup>14</sup>

The faith-wise distribution of the present study is consistent with other studies from Pakistan showing more than 90% proportion of Muslims among medicolegal cases of alcoholism.<sup>11,15</sup> The occupational distribution indicates that shopkeepers represent a higher frequency of alcoholism which is contrary to other studies where laborers have represented the highest frequency.<sup>14-16</sup> The findings of the present study may suggest that alcohol consumption has a substantial frequency among students. The increasing level of alcohol consumption by students has been reported in international<sup>17</sup> and local<sup>18</sup> studies. A higher frequency of alcoholic cases related to shopkeeping and laborers from rural areas that were brought in for medicolegal examination may be due to higher aggravation they create at public places in comparison to other occupations which might exhibit better tolerance.<sup>15</sup>

The slurred speech and lack of coordination are characterized as obvious signs and symptoms of alcohol intoxication.<sup>2</sup> A medicolegal examination of alcoholism found slurred speech and congestion of eyes respectively in 79% and 93% of all cases.<sup>16</sup> Similarly, Haider and Chaudhry<sup>15</sup> reported slurred speech in 78.65% and congestion of eyes in 90.67% of alcoholics that were brought to the forensic department. The attention, general disposition, and coordination were disturbed in most of the cases of the present study. The strong associations between the presence of alcohol in the blood and muscular in coordination, increased reaction time, diminution of attention, and impaired

balance have been reported for forensic purposes in the literature.<sup>2</sup>

## CONCLUSION

A majority of the cases of medicolegal alcoholism were males of adult age (21-30 years) from rural localities having shopkeeping as their occupation. The majority of the cases were characterized by congestion of the eyes and impaired speech, attention, coordination and gait.

### Author's Contribution:

Concept & Design of Study:	Abdul Samad
Drafting:	Ishtat Bibi, Hafiza Naima Anwar
Data Analysis:	Deedar Ali, Shahla Imran, Jamshed-ul-Qadir Memon
Revisiting Critically:	Abdul Samad, Ishtat Bibi
Final Approval of version:	Abdul Samad

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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