



## Oncology

## COMPARATIVE ANALYSIS ON AWARENESS OF HEPATOCELLULAR CANCER AMONG ALCOHOL CONSUMERS IN BHOPAL AND DUBAI.

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**ABSTRACT** Alcohol consumption is a problem that plagues our modern societies and is a serious hazard towards development of hepatocellular cancer. The present study aims to look out the differences in Indian and Middle-east populations w. r.t. 6 broad categories: Demographic, alcohol and lifestyle, Quantitative, associated evaluations, symptomatology variations and psycho-social evaluation. Statistically significant differences have been observed in all the 6 categories of evaluation and it has been inferred that the Indian population has a greater alcohol dependence, greater per-week alcohol consumption, significantly more symptom presentations predisposing to development of hepatocellular cancer, interestingly higher knowledge of harmful effects of alcohol on the body but still low resolve to quit alcohol.

## KEYWORDS :

## Introduction

Alcohol consumption is a problem that has plagued the human civilization since times immemorial with its deadly ramifications affecting the individual, family and the society at large. It also predisposes an individual to increased chances of contracting a serious malignancy which is hepatocellular cancer. Studies on this field till now (1) have shown the relationships between alcohol consumption and liver damage but to the best of our knowledge, there has been no study thoroughly analyzing the basic reasons as to why people continue to drink alcohol despite knowing its adverse effects and how this behaviour varies when a group of individuals from a developing country move to a developed country.

## Methodology

The sample consisted of 100 males (of Indian origin) each with known history of alcohol consumption from Bhopal (India) and Dubai (UAE). The subjects from both the cities were age and educational qualification matched (2). 90 % of the Bhopal Indians were either unemployed or were doing unskilled or semiskilled work whereas 90% of the Dubai Indians were skilled professionals.

Both groups were asked to fill prevalidated questionnaire, which was subsequently analysed. Consent of every subject was taken and Institutional Human Ethics Committee approval was obtained prior to start of study.

The Questionnaire had 6 major areas upon which the responses were analyzed:

1. Demographic analyses (Age, Gender, Educational Qualification, Religion and Socioeconomic status).
2. Alcohol and life style analyses (Questions pertaining to how this habit of alcohol consumption was affecting their routine lives).
3. Quantitative Evaluations (Weekly alcohol consumption, type of alcoholic beverage mostly consumed and Time of most frequent alcohol consumption)
4. Associated Evaluations (presence of other co-morbidities in the individual which can aggravate the risks of developing hepatocellular cancer like: smoking, hepatitis B/C Infection, History of Blood transfusion, Immune status, Vaccination Status).
5. Symptom presentation in those individuals( Classic symptoms of liver damage which were taken from Harrison's textbook of Internal Medicine 19th edition : abdominal pain, jaundice, weight loss, appetite loss, presence of swelling and tremors/disorientation )
6. Psychosocial analyses (willingness to go for a liver cancer screening program, knowledge about cancer, parts of body damaged by alcohol consumption and the resolve to quit drinking after knowing their

individual risks for development of hepatocellular cancer).

After compiling the results of the individuals, data entry was done into MS Excel spreadsheets and inter-group analyses was done using Fischer's 2 tailed t-test for determining the p-value for statistically significant difference between the 2 groups. Other significant trends were analyzed using Epi-Info 7.0 .P-value of <0.05 was considered to be statistically significant.

## Results

The Indian subgroup as compared to the Dubai subgroup, had tried to quit alcohol for more than a week but failed in the process ( $P<0.0001$ ), wanted people to mind their own business rather than being told to quit alcohol ( $P<0.0001$ ), had tried switching between various alcoholic beverages in hope of quitting their drinking habit but Failed ( $P<0.0001$ ), had a shot of alcohol just after waking up ( $P<0.0001$ ), envied people who could drink without getting into trouble ( $P<0.0001$ ), had missed days of work and / or schooling as of their drinking habit ( $P<0.0001$ ) and lastly, were of the strong opinion that quitting alcohol would have a positive impact on their lives ( $P<0.0001$ ).

No significant difference was observed with respect to the weekly alcohol consumption in terms of quarters per week for the 2 groups. (1 quarter = 180 ml of the alcoholic beverage). Both of the groups had a liking for Whisky (70 % in Indian group and 86% in Dubai Group) which has a high concentration of alcohol (up to 42.8 % weight/volume). No significant difference between the groups was found with respect to those drinking high alcohol content beverages like whisky and low alcohol content beverages like beer (up to 12 % alcohol weight/volume). Both the groups had a habit of getting drunk late in the evening or at night and a company was preferred for the drinking as opposed to drinking alone in the Indian group ( $P=0.0055$ ). It is established that drinking in company promotes more per person alcohol consumption rather than drinking alone. (3) Surprisingly, both the groups had equal numbers of individuals who had smoking habit in addition to alcohol consumption (70% of the total). The Dubai group had more individuals who had suffered from hepatitis B/C as compared to Indian individuals ( $P=0.0097$ ) although no statistically significant difference was found between the immunization statuses of the groups with respect to hepatitis B ( $p=0.8763$ ). Self reported episodes of illness in the past 1 year were significantly higher in the Indian group ( $P<0.0001$ ). The difference between the groups with respect to getting a blood transfusion at any point in their lives was insignificant ( $P=0.0594$ ). Most striking differences were observed in the frequencies of the appearance of symptoms of liver damage, whereby, although the 2 age-matched, education-matched male populations had similar quantitative alcohol consumptions per week that too of similar high alcohol-content whisky, the Indian group showed significantly higher incidences of symptoms like Abdominal Pain ( $p<0.0001$ ), objective weight loss ( $p<0.0001$ ), appetite loss ( $p<0.0001$ ), jaundice ( $p<0.0001$ ), episodes of tremor or

disorientation much after the consumption of alcoholic beverage ( $p < 0.0001$ ) and swellings on the dependent body parts ( $p < 0.0001$ ). (5) The Dubai group had 3 or lesser than 3 of the aforementioned symptoms for any of their males (nobody had more than 3 symptoms) whereas the Indian group had 68% of the males having 3 or more than 3 of the symptoms mentioned above which is an alarming presentation as more symptoms per individual means more chances of early onset hepatocellular cancer and liver cirrhosis development. (4) The Indian group did feel that the symptoms they were presenting with are a cause of concern ( $P = 0.0041$ ) as compared to the Dubai group which had nonetheless lesser symptom presentations. Both groups unequivocally advocated that any person who presents with these symptoms must get screened for an illness ( $P = 0.8433$ ) although their knowledge about the exact procedures of screening and the interpretations of a screening test were minimal more so for the Dubai group ( $P = 0.0004$ ). Many respondents of the Dubai group even did not know about Cancer ( $P = 0.014$ ), but those who knew had an idea of what parts of the body were adversely affected by alcohol consumption whereby the majority opined for Liver being the worst hit organ, although this observation had a difference among the groups whereby Indian group had a stronger intuition of the affected parts compared to Dubai group ( $P = 0.0109$ ) in whom 30% of the respondents said that no body part was affected by alcohol consumption ( $P = 0.0171$ ).

The last question assessed the resolve to stop drinking after this interactive session and risk stratification for future development of hepatocellular cancer, whereby the Dubai group demonstrated significantly greater willingness to Quit Alcohol as compared to their Indian counterparts ( $P < 0.0001$ ).

### Inferences and Conclusion

This cross sectional study has demonstrated with reasonable certainty that Indian males living in India have suffered greater Mental setbacks, more physical symptoms of Liver damage, greater awareness of Alcohol associated health hazards and need for cancer screening but a weaker resolve to quit alcohol consumption as compared to Age-matched, Education-matched Indian Males who emigrated to Dubai (United Arab Emirates), despite similar per week quantitative Alcohol consumption patterns and co-morbidities like smoking.

### Future Directions

Targeted research needs to be done on a larger sample size and better confounder exclusion to investigate the underlying mechanisms for why Individuals with similar geo-ethnic origin, age, educational status, alcohol consumption patterns (both qualitatively and quantitatively) and smoking status, have such wide disparities in symptom presentations pertaining to liver damage and development of hepatocellular cancer in the later years of their life.

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