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An epidemiological study on association between alcohol and tobacco use among male aged 15 year and above in urban area of Ghaziabad city (UP)

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Abstract

Alcohol consumption and problems related to alcohol vary widely around the world, but the burden of disease and death remains significant in most countries. Though there are studies indicating co-occurrence of alcohol use with tobacco, not much work is done on association of alcohol and tobacco use in India. A cross sectional study was conducted on 324 individuals aged ≥ 15 years by house to house visit, selected from urban field practice area of the Santosh medical college, Ghaziabad (U.P) by using simple random sampling between May 2010 to April 2011. Data was collected by home visit using WHO questionnaire (AUDIT: Alcohol Use Disorder Identification Test) as study tool by interviewing each study subject. In the present study among current drinker, 60% used smoked tobacco and 15.5 of the Teetotalers' were smoker. Similarly, smokeless tobacco used by 25.8 current drinkers and 6.2 of Teetotalers'. A highly significant association was found between tobacco and alcohol use. The Present Study Highlights the Association between Concurrent alcohol and tobacco use among Indian population. It can be very well concluded that alcohol users are more indulged into tobacco use as compared to teetotalers. Therefore, high risk screening for tobacco use among the alcoholics can be a vital step in the prevention of addiction, which is emerging as one of the major risk factor for non-communicable diseases.

Key words: AUDIT, tobacco use, smokeless tobacco use, urban area, alcohol

Introduction

Alcohol has been consumed in India at least since the Vedic period of 2000–800 BC¹⁰. The close association between tobacco and alcohol use is well established. About 80% of alcoholics smoke, and about 30% of smokers are alcoholics.⁵ Prospective analyses reveal that tobacco use is associated with heavy drinking in later life.^{11, 12} Heavier alcohol use has been reported among those with nicotine dependence, and is more among those with severe forms of nicotine dependence.^{9, 4& 20} The opposite is also true^{1, 23} that, the tobacco will be responsible for 10 million deaths per year in the next decade, with 70% of them occurring in developing countries. In India tobacco kills 0.8-1.0 million people each year and many of these deaths occur in people who are young.²

Alcohol consumption and problems related to alcohol vary widely around the world, but the burden of disease and death remains significant in most countries. Approximately 4.5% of the global burden of disease and injury is attributable to alcohol. Alcohol consumption is the world's third largest risk factor for disease and disability; in middle-income countries, it is the greatest risk. Alcohol is a causal factor in 60 types of diseases and injuries and a component cause in 200 others. Almost 4% of all deaths worldwide are attributed to alcohol, greater than deaths caused by HIV/AIDS, violence or tuberculosis. Alcohol is attributed to nearly 3.2% of all deaths and results in a loss of 4% of total DALYs (58 million).²⁴

The rationale of this study is that though there are studies indicating co-occurrence of alcohol use with tobacco, there is no such study in this part of the region. Thus, it reinforces on the findings of the very few studies and that too in different part of the country showing the existence of association between alcohol and tobacco use.

Material and Methods

A Community based cross-sectional study was conducted in an urban area, Mirzapur and G, E, F block of Pratap vihar in the field practice area of the department of Community Medicine, Santosh Medical College, Ghaziabad (UP) among males aged ≥ 15 years during September 2010 to October 2011. It covers a total population of 9,971 residing in approximately 1,781 families. Sample size for present study was calculated according to o National Family Health Survey-3²¹ where prevalence of alcohol use in U.P. was given as 25.3% in males, therefore the adequate sample size calculated was approximately 324 assuming 10% non response and considering 5% absolute error. Individual unit (family) constituting the sample was randomly selected by Random number table method. All the male members aged ≥ 15 years were taken from each family after taking their written consent. If male aged ≥ 15 years were not found in a family then the next family was visited. If the selected subject was not found at the first interview, date and time was taken from their family members for revisit. Each individual was told about the purpose of the study, and confidentiality of the information was assured. Informed consent was sought from each study subjects. For adolescents aged 15-18 years, consent was obtained from parent and the individual. They were informed about the nature and the purpose of the study, the procedure involved and the potential risks and benefits. It was explained to the subjects the information they give us will be kept confidential. Data was collected by home visit using WHO questionnaire (AUDIT: Alcohol Use Disorder Identification Test) as study tool by interviewing each study subject.¹⁸

The definition used for various parameters (smoking) were as per the WHO STEPS guideline.²² The socioeconomic status of study subjects was determined as per modified Kuppu swami classification. Data analysis has been done using SPSS version 16.0 and Microsoft Office Excel 2007. To test significance, chi square test have been used as applicable. All p value was two tailed and values of < 0.05 were considered as statistical significance.

Observation and Results

Majority of the study subjects were seen in 15-19 years age group (20.9%) with least (7.0%) being above 60 years. Out of total study participants more than 1/3 (37.6 %) of the study population had schooling of up to eighth class, and only 7.0% were educated above high school. As far as the occupational classification is concerned, maximum number of study population was formed by laborer (44.7%), followed by unemployed (18.5) and 9.8% of the study population were doing service. According to Kuppuswami classification about 55.8% of the participant's belonged to upper middle class with least being 2.1% in the lower class. Majority of study subjects belong to Hindu (95.6%) by religion; maximum belonged to general caste (64.8%) and More than half (54.6%) were having nuclear type of family while 45.0% were having joint family. (Table 1).

Table 2 shows that, among current drinker, 60.0% used smoked tobacco while 15.5% of the teetotalers were smokers. Similarly, smokeless tobacco used by 25.8% of current drinker. At the same time, 78.3% of the teetotalers were not addicted. A highly significant association was found between tobacco use and alcohol use (p-value- 0.000). On comparing tobacco users with no addiction, there was statistically significant association was found between tobacco users and those which had no addiction (table 3)

Discussion

In the present study, 324 subjects were analyzed to assess the prevalence of alcohol use and its association with smoking habit. The increased risk of alcohol use associated with increased consumption of tobacco has been prospectively studied in the general population.^{12, 13} In present study almost 2/3 of people who consume alcohol also smoke while only 15.5% of non alcoholic are smoking. This indicates a close relationship between alcohol use and increased tobacco use. A similar association was found in a large study from India¹⁵ and another from Brazil.¹⁷ Similar findings are also found in various studies across the world. The positive association between smoking and alcohol use has been consistently demonstrated (Koopmans et al., 1997¹⁴, Flay et al., 1998⁷; Epstein et al., 1999⁶, Chen et al., 2002³). Gupta P.C. et al (2005)⁸ in their study reported that among alcohol users, 51.1% smoked tobacco and 35.6% used smokeless tobacco which is different in our study showing 60.0% of smokers while 25.5% were using smokeless form of tobacco, similar finding found in study of Sampath S.K. et al (2007)¹⁹ in their study in Kolar in Southern India declared that smokers were more likely to drink than non-smokers and they were more problem drinkers than dependent drinkers.

Conclusion

Most important conclusion is the reinforcement of the association between the two addictions of alcohol and tobacco use which indicates the need of stringent measures towards imparting health education among the alcoholics on tobacco use as well. WHO identified six evidence-based tobacco control measures that are the most effective in reducing tobacco use known as "MPOWER". These measures are to monitor tobacco use and prevention policies, to protect people from tobacco smoke, to offer help to quit tobacco use, to warn people about the dangers of tobacco, to enforce bans on tobacco advertising, promotion and sponsorship, and to raise taxes on tobacco. The local and central governments of India should implement those measures to reduce health burden of tobacco use.¹⁶

References

1. Betel P, Pessione F, Maitre C, Rueff B. Relationship between alcohol and tobacco dependencies among alcoholics who smoke. *Addiction* 1995;90:977–80
2. Chatterjee T, Haldar D, Mallik S et al. A study on habits of tobacco use among medical and non-medical students of Kolkata. *Lung India: Official Organ of Indian Chest Society* 2011; 28 (1): 5-10. Epub 2011/06/10.
3. Chen, X., Unger, J.B., Palmer, P., Weiner, M.D., Johnson, C.A., Wong, M.M., Austin, G., 2002. Prior cigarette smoking initiation predicting current alcohol use: evidence for a gateway drug effect among California adolescents from eleven ethnic groups. *Addict. Behav.* 27, 799–817.
4. Daepfen JB, Smith TL, Danko GP, Gordon L, Landi NA, Nurnberger JI Jr, et al. Clinical correlates of cigarette smoking and nicotine dependence in alcohol-dependent men and women. The Collaborative Study Group on the Genetics of Alcoholism. *Alcohol Alcohol* 2000;35:171–5
5. DiFranza JR, Guerrera MP. Alcoholism and smoking. *J Stud Alcohol* 1990;51:130–5
6. Epstein JA, Botvin GJ, Diaz T. Linguistic acculturation and gender effects on smoking among Hispanic youth. *Preventive Medicine.* 1998; 27:583–89.

7. Flay B. R., Phil D., Hu F. B., Et Al. Psychosocial predictors of different stages of cigarette smoking among high school students. *Preventive Medicine* (1998) 27:9–18.
8. Gupta P.C., Pednekar M.S., Maulik P.K., Saxena S. Concurrent alcohol and tobacco use among a middle aged and elderly population in Mumbai *Natl Med J India*. 2005 Mar-Apr; 18(2): 88-91.
9. Henning field JE, Clayton R, Pollin W. Involvement of tobacco in alcoholism and illicit drug use. *Br J Addict* 1990; 85:279–91.
10. Isaac M. Contemporary trends: India. In: Grant M. ed. *Alcohol and emerging markets, patterns, problems and responses*. Philadelphia: Taylor & Francis, 1998: 145– 176.
11. Jackson KM, Sher KJ, Wood PK, Bucholz KK. Alcohol and tobacco use disorders in a general population: Short-term and long-term associations from the St Louis epidemiological catchment area study. *Drug Alcohol Depend* 2003; 71:239–53.
12. Jensen MK, Sorensen TI, Andersen AT, Thorsen T, Tolstrup JS, Godtfredsen NS, et al. Prospective study of the association between smoking and later alcohol drinking in the general population. *Addiction* 2003; 98:355–63.
13. John U, Meyer C, Rumpf HJ, Schumann A, Thyrian JR, Hapke U. Strength of the relationship between tobacco smoking, nicotine dependence and the severity of alcohol dependence syndrome criteria in a population-based sample. *Alcohol* 2003;38:606–12
14. Koopmans, J.R.; Van Doornen, L.J.; And Boomsma, D.I. Association between alcohol use and smoking in adolescent and young adult twins: A bivariate genetic analysis. *Alcoholism: Clinical and Experimental Research* 21:537–546, 1997.
15. Mohan D, Chopra A, Sethi H. The co-occurrence of tobacco and alcohol in general population of metropolis Delhi. *Indian J Med Res* 2002;116:150–4
16. Monitor tobacco use and prevention policies. Available on <http://www.who.int/tobacco/mpower/en/>. Last accessed on 29/4/13
17. Moreira LB, Fuchs FD, Moraes RS, Bredemeir M, Cardozo S. Prevalence of smoking and associated factors in a metropolitan area in the southern region of Brazil. *Rev Saude Publica* 1995;29:46–51
18. Park K. *Medicine and social sciences*. Park's textbook of preventive and social Medicine, 20th ed., Jabalpur, Banarsidas Bhanot Publishers, 2009: 609.
19. Sampath S.K., Chand P.K., Murthy P. Problem Drinking among Male inpatients in a Rural General Hospital: *Indian Journal of Community Medicine*. 2007 Jan; 1 (1).
20. Schumann A, Hapke U, Rumpf HJ, Meyer C, John U. The association between degree of nicotine dependence and other health behaviors: Findings from a German general population study. *Eur J Public Health* 2001;11:450–2
21. Subramanian S. V., Nandy S., Irving M, Gordon D., Smith GD. Role of socioeconomic markers and state prohibition policy in predicting alcohol consumption amongst men and women in India: a multi level statistical analysis. *Bulletin of the World Health Organization*, 2005; 83(11): 829–836.
22. The WHO STEP wise approach to Surveillance of non communicable diseases (STEPS) *Non-communicable Diseases and Mental Health*, WHO/NMH/CCS/03.01 Geneva: World Health organization
23. Tuomilehto J, Zimmet P, Taylor R, Bennet P, Wolf E, Kankaanpaa J. Smoking rates in Pacific islands. *Bull World Health Organ* 1986; 64:447–56.
24. World Health Organization (WHO), *World health report 2002 – reduces risks, promoting healthy Life*, Geneva, 2002.

Table 1: Distribution of study subjects according to their background characteristics

Characteristics	No. %
Age (Years)	
15-19	68 (20.9)
20-24	63 (19.4)
25-29	51 (15.7)
30-39	45 (13.8)
40-49	41(12.6)
50-59	33 (10.1)
60+	23 (7.0)
Social class (Modified kuppuswami class)	
Upper	11 (3.3)
Upper Middle	181(55.8)
Lower Middle	64 (19.7)
Upper Lower	58(17.9)
Lower	7 (2.21)
Religion	
Hindu	310 (95.6)
Non Hindu	14(4.3)
Caste	
General	210(64.8)
OBC	81(25.0)
SC / ST	32(9.8)
Type of family	
Nuclear	177(54.6)
Joint	146 (45.0)
Educational status	
Illiterate	98 (30.2)
J.H. School	122 (37.6)
H. School	78 (24.0)
> H. School	23(7.0)
Occupation	
Unemployed	60 (18.5)
Student	31 (9.5)
Laborer	145 (44.7)
Service	32 (9.8)
Own Business	53(16.3)

Table 2: Association of tobacco use with alcohol use

Type of addiction	Teetotalers' N=239 (%)	Current drinker N=85 (%)
Smoking	37(15.5)	51(60.0)
Smokeless tobacco	15(6.2)	22(25.8)
No addiction	187(78.3)	12(14.2)

$\chi^2 = 109$, DF= 2, P- value 0.000

Table 3: Association of tobacco use with alcohol use

Type of addiction	Teetotalers' N=239 (%)	Current drinker N=85 (%)
Tobacco uses*	52(21.7)	73(85.8)
No addiction	187(78.3)	12(14.2)

- Includes both smokeless and smoked tobacco users