



# PATTERN OF TOBACCO AND ALCOHOL USE AMONG ELDERLY POPULATION IN A RURAL AREA OF ANDHRA PRADESH, INDIA

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**Financial Support:** None declared

**Conflict of interest:** None declared

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**How to cite this article:**

Udayar SE, Ashok PB, Arun D, Sravan S. Pattern of Tobacco and Alcohol Use among Elderly Population in a Rural Area of Andhra Pradesh, India. Ntl J of Community Med 2015; 6(3):302-306.

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**Date of Submission:** 09-08-15

**Date of Acceptance:** 23-09-15

**Date of Publication:** 30-09-15

## ABSTRACT

**Background:** Tobacco and alcohol consumption are the leading cause of preventable death. Fewer studies have focused on tobacco and alcohol use among rural elderly. Objective of the study was to find out the prevalence of tobacco and alcohol use among rural elderly population and its association with various sociodemographic factors.

**Method:** Cross-sectional community based study was conducted in the rural area of V.Kota mandal of Chittoor district, Andhra Pradesh. Study participants were selected using multistage random sampling method.

**Results:** The prevalence of current tobacco users was 40.5%, among them 37.2% men and 1.4% women were current smokers. Among tobacco chewers 37.3% were women and 17.3% were men. Alcohol consumption was seen in 28.7% of the men compared with 0.9% of the women. Tobacco and alcohol use was significantly associated with age, education, economic status, marital status and living arrangements.

**Conclusion:** There is a high prevalence of smoking and alcohol consumption among men in this rural elderly population which needs to be addressed immediately to prolong health living years.

**Key words:** Tobacco use, alcohol use, elderly, rural, pattern

## INTRODUCTION

Chronic non-communicable diseases are assuming increasing importance among the adult population in both developed and developing countries. Cardiovascular diseases and cancer are at present the leading causes of death in developed countries<sup>1</sup>. Tobacco continues to be leading cause of preventable deaths worldwide. World Health

Organization reports that the consumption of tobacco has been growing at the rate of 2% to 5% per annum and six million people are currently estimated to die annually from tobacco use. Tobacco use accounts for 7% of all female and 12% of all male deaths globally and it is projected to increase to 8 million deaths per year by 2030, or 10% of all deaths projected to occur that year<sup>2</sup>.

It is a well known fact that there is a casual relationship between alcohol consumption and more than 60 types of diseases and injury. 20%–30% of oesophageal cancer, liver cancer, and cirrhosis of the liver, homicide, epilepsy and motor vehicle accidents are caused by alcohol use. Worldwide, 1.8 million deaths and 58.3 million DALYs are attributed to the use of alcohol<sup>3</sup>.

Most of the studies on tobacco and alcohol use focus on the prevention of problems related to the use of these substances in adolescents and youngsters. Few studies have reported the prevalence of tobacco consumption to be 52%<sup>4</sup> and the alcohol consumption at 10%<sup>5</sup> respectively in the elderly age group of  $\geq 60$  years. However, studies focusing on the elderly are infrequent.

India is witnessing a demographic transition wherein it has been projected to increase by four times by the year 2050<sup>6</sup>. Hence there is need for urgent action to bring down the risk factors among elderly population in order to prolong healthy life among them. To achieve this, the prevalence of tobacco and alcohol use is needed for planning and implementation of health intervention activities to target this group of population especially in rural areas. Hence this study was conducted to know the extent and pattern of tobacco and alcohol use and to find out their association between various socio-demographic factors among rural Indian elderly population.

## METHOD

A community based cross sectional study was done in the villages of Venkatagiri Kota Mandal, Chittoor District of Andhra Pradesh, by applying multi stage random sampling technique. The study duration was for a period of six months (Jan-June 2014). Elderly persons aged 60 yrs and above were selected by applying multistage random sampling technique. Out of 34 villages with a population of approximately 50000 in the V. Kota Mandal 10 villages were selected randomly. In these 10 villages a house to house survey was conducted to identify elderly aged 60 yrs and above. From the center of the village one street was selected randomly by currency note method. Only one side of the street was selected by tossing a coin. On one side of the street selected, households were surveyed for elderly people. Men and women aged 60 years and above who are residing in the village for a period of one year and those who are willing to participate in the study were included in the study. Elderly persons who were

not found even after 3 visits were excluded from the study. Only one elderly person from the household will be interviewed if more than one elderly person is available at single household. Informed consent was taken from each study participant after explaining the purpose of the study and the approval of the institutional ethics committee was taken for conducting this study.

Sample size was calculated on the basis of the prevalence of tobacco consumption in various forms which was around 52 % in a study done in rural areas of Aurangabad<sup>7</sup>. Hence 382 elderly people aged 60 years and above were included in the study. Study tools included a pretested semi-structured questionnaire for collecting sociodemographic information, Michigan Alcoholism Screening Test - Geriatric Version (MAST-G) tool<sup>8</sup> and a subset of key questions from Global Adult Tobacco Survey Tools (GATS)<sup>9</sup> were used to find out extent of alcohol and tobacco consumption respectively. Both questionnaires were translated into local language, the vernacular and retranslated into English.

The MAST-G which consists of a set of 24 questions with responses in the form of yes or no is a well validated assessment and screening tool that can be used in the elderly subjects to identify the alcohol problem. A score of 5 or is indicative of alcohol problem. GATS is a globally accepted tool for monitoring and comparing trends in tobacco use and tobacco control interventions subset of key core questions from GATS tool was used to find out the prevalence of tobacco consumption, information regarding second hand smoke, attempts to quit, sources of anti cigarette information, cigarette advertisements and economics.

WHO classification was used to define smoking. Current daily smokers were defined as those who were currently smoking tobacco daily in the form of cigarettes, bidis (hand-manufactured cigarettes consisting of tobacco wrapped in a temburini leaf), hookah (Indian water pipe), chillum, or any other smoked form. Similarly, current daily smokeless tobacco users were defined as those who were currently using chewable tobacco products: khaini (tobacco-lime mixtures), gutkha (tobacco with betel nut, catechu, lime, and flavorings), naswar (snuff), or zardapaan (betel quid with tobacco) daily<sup>10</sup>. Alcohol users were classified as past and current users.

Current alcohol users were those who had consumed alcohol at least once during the past one year preceding the time of the interview whereas

past users were defined as persons who had consumed alcohol at least once during their lifetime but had not done so for a period of one year preceding the survey<sup>3</sup>.

Statistics: Results were summarized as mean, standard deviation, and proportions. Chi-square test was applied to find association with socio-demographic variables. Analysis was done using SPSS software package 19<sup>th</sup> version.

**RESULTS**

**Socio demographic profile:** A total of 382 elderly persons were included in the study. The mean (±SD) age was 67.29±7.52 among men and 59.68% among women. Almost one fifth of the study participants were illiterates and 24.6% subjects were belonged to lower socio economic status according to modified BG Prasad classification<sup>11</sup>. Majority 85% of the study participants were living with either spouse or children.

**Tobacco Consumption:** The overall prevalence of tobacco consumption was 40.5 % ( Table 2) who were consuming tobacco in the form of smoking and chewing. 79.5% of the study participants were never smokers, 16.7% were current smokers and only 3.7% were past smokers. Prevalence of smoking was high in males(37.2%) when compared to females(1.4%) and this difference was statistically significant. More number of women were current tobacco chewers (35.3%) than men (7.3%) and it was statistically significant.

**Alcohol consumption:** Only a small proportion (12.8%) of the study participants were current alcohol consumers followed by past alcohol consumers (4.1%). Proportion of current alcohol users in males was 28.7% compared to negligible users among females. This difference was found to be statistically significant. 23 out of 47 men who were consuming alcohol had a score of more than 5 in the MAST-G scoring scale which indicated alcohol problem.

Table 3 shows the relationship between current tobacco use and various sociodemographic variables. There was a significant decline in the proportion of participants consuming tobacco as the age increases (p<0.000). Lower literacy levels, poor socioeconomic status, those who were widowed or separated from the family and living alone were consuming tobacco in a higher proportion in contrast to others. This difference was statistically

significant except for the family type. Similar relationship was observed for current alcohol users with various variables except for the socioeconomic status (Table 3).

Regarding frequency of smoking in the home, 53 participants were smoking daily in the home whereas 11 were smoking weekly once. When enquired about smoking at workplaces about 44 study participants had a habit of smoking in work places.

**Table 1: Distribution of study subjects according to socio-demographic characteristics.**

Characteristics	Male (%)	Female (%)
<b>Age group</b>		
61-70	110 (44.2)	139 (55.8)
71-80	37 (51.4)	67 (48)
>80	17 (60.7)	12 (39.3)
<b>Family type</b>		
Nuclear	66 (45.8)	78 (54.2)
Joint	36 (38.7)	57 (61.3)
Three generation	60 (44.8)	74 (55.2)
<b>Living with</b>		
Alone	8 (23.5)	26 (76.5)
Spouse	61 (55.5)	49 (44.5)
Children	91 (40.4)	134 (59.6)
Relative	1 (20)	4 (80)
<b>Marital status</b>		
Married	139 (44.7)	172 (55.3)
Unmarried	11 (57.9)	8 (42.1)
Separate	4 (57.1)	3 (42.9)
Widow/widower	4 (12.5)	28 (87.5)

**Table 2: Sex wise prevalence of tobacco and alcohol consumption among study subjects**

Pattern of \ Use	Men (%)	Women (%)	Total n=382	P value
<b>Tobacco Smoking</b>				
Never users	90(54.9)	214(98.1)	304(79.5)	<0.01
Current smokers	61(37.2)	3 (1.4)	64 (16.7)	
Past smokers	13 (7.9)	1 (0.4)	14 (3.7)	
<b>Tobacco Chewing</b>				
Never Users	145(88.4)	132(60.5)	277(72.5)	<0.01
Current	12 (7.3)	77 (35.3)	89 (23.3)	
Past Chewers	7 (4.2)	9 (4.1)	16 (4.1)	
<b>Alcohol Use</b>				
Never Users	109(66.5)	215(98.6)	324(84.8)	<0.01
Current	47 (28.7)	2 (0.9)	49 (12.8)	
Past users	8 (4.9)	1 (0.4)	9 (2.3)	

**Table 3: Association between current tobacco use and various socio demographic factors**

	Current Tobacco use		X <sup>2</sup>	P value	Current Alcohol use		X <sup>2</sup>	P value
	Present (%)	Absent (%)			Present (%)	Absent (%)		
<b>Age</b>								
60-70	118 (47.4)	131 (52.6)	16.5	0.000	45 (15.7)	242 (84.3)	7.02	0.000
71-80	29 (27.8)	75 (72.2)			3 (4.5)	63 (95.5)		
>80	6 (20.5)	23 (79.5)			1 (3.4)	28 (96.6)		
<b>Education</b>								
Illiterates	46 (60.5)	30 (39.5)	17.8	0.001	17 (22.4)	59 (77.6)	10.3	0.03
Primary	39 (36.8)	67 (63.2)			13 (12.3)	93 (87.7)		
Secondary	31 (36.9)	53 (63.1)			10 (11.9)	74 (89.1)		
Higher secondary	21 (35.0)	39 (65.0)			7 (11.7)	53 (89.3)		
Degree	16 (28.6)	40 (71.4)			2 (3.6)	54 (96.4)		
<b>Socio-economic status</b>								
Upper	8 (28.6)	20 (71.4)	46.5	0.000	2 (7.1)	26 (92.9)	4.58	0.330
Upper middle	12 (29.3)	29 (70.7)			6 (14.6)	35 (85.4)		
Lower middle	32 (38.1)	52 (61.9)			9 (10.7)	75 (89.3)		
Upper lower	41 (28.3)	104 (71.7)			16 (11.0)	129 (89.0)		
Lower	60 (57.7)	24 (42.3)			16 (19.0)	68 (81.0)		
<b>Family type</b>								
Nuclear	57 (42.3)	76 (57.7)	4.5	0.105	28 (21.0)	105 (79.0)	12.36	0.002
joint	41 (32.5)	85 (67.5)			11 (8.7)	115 (91.3)		
Three generation	55 (44.7)	68 (55.3)			10 (8.1)	113 (91.9)		
<b>Marital status</b>								
Married	89 (33.7)	175 (66.3)	4.5	0.002	25 (9.5)	239 (80.5)	10.9	0.012
Unmarried	13 (56.5)	10 (43.5)			4 (17.4)	19 (82.6)		
Widow/widower	35 (57.4)	26 (42.6)			14 (22.9)	47 (77.1)		
Separated	16 (47.0)	18 (53.0)			6 (17.6)	28 (82.4)		
<b>Living with</b>								
Alone	26 (63.4)	15 (36.6)	14.45	0.002	11 (26.8)	30 (73.2)	36.1	0.000
Spouse	47 (41.6)	66 (58.4)			28 (24.8)	85 (75.2)		
Children	74 (36.6)	128 (63.4)			09 (4.5)	193 (95.5)		
Relatives	6 (23.1)	20 (76.9)			01 (3.8)	25 (66.2)		

**Table 4: Information regarding awareness, attitude and practices regarding anti cigarettes**

Variables	Numbers (%)
Attempting to Quit smoking	49(12.8)
Visiting a Doctor	37(9.7)
Receiving Cessation advice from Doctor	44(11.5)
Noticing Anti-Cigarette information in newspaper/magazines	25(6.5)
Noticing Anti-Cigarette information in Television	38(9.9)
Noticing Health warnings on cigarette packs	11(2.9)
Thinking about quitting because of health warning on cigarette packs	5(1.3)
Cigarette advertising in stores.	3(0.8)

## DISCUSSION

Our study found out that there was a high prevalence of tobacco consumption (40.05%). Consumption of tobacco in the form of smoking is a

widely spread phenomenon among males in rural areas of our country<sup>12-15</sup>.

Studies<sup>14,15</sup> done in rural India revealed that the prevalence of tobacco smoking was high among males when compared to females. Similar findings (37.2% vs 1.4%) were noted in our study also. This was probably due to early initiation of smoking habits in males during working period of life, influence of peer pressure and a widely spread social norm of offering cigarettes, beedies whenever there a gathering men in functions, meetings etc. But the prevalence of tobacco chewing was high in females in our study (35.3% vs 7.3%), a similar finding was observed by Goswami A et al<sup>3</sup>. Welcoming or inviting the person for social gatherings with beetle leaf and beetle nuts which is very much prevalent cultural practice in this part of the rural India would have resulted in a habit which might be an important contributing factor for the huge difference in tobacco chewing. In our study an attempt was made to elicit the response regarding awareness, attitude, health

seeking behaviour regarding cessation of tobacco smoking which was found to be very low.

The present data shows that, 12.8% of elderly people were currently consuming the alcohol which can be compared to similar findings in other studies<sup>13,14</sup>. Prevalence of drinking was high in elderly males than in females. This could be because of various social factors like peer influence, perception about alcohol drinking as a means of recreation after hard labour day in the fields. The prevalence of tobacco and alcohol consumption declined with the increased age (maximum in 61-70 years age group and minimum in more than 80 years group) which was similar to findings of Goswami Aet al<sup>3</sup>.

A high proportion of tobacco and alcohol consumption was noticed among the elderly persons with low literacy levels, socioeconomic status, widowed or unmarried and those individuals who were living alone. This indicates various social, cultural and economic factors contributing to burden of addiction problem among elderly people in rural areas.

## CONCLUSION

This study shows high prevalence of tobacco and alcohol use among elderly people in this rural area and its use was significantly associated with low educational, low economic status, those who were either unmarried or widowed or separated. Living arrangements like staying alone is also significantly associated with tobacco use. Although the prevalence of tobacco was more in the young older i.e, 60-70 years groups this can be attributed to the survival rates in the older ages after 80 years. There was a strong association between age and tobacco consumption. Considering the fact that the tobacco and alcohol consumption is a serious health concern as various disorders can be attributed to it a considerable amount of attention is needed in this area such as creating awareness regarding harmful effects of consumption of tobacco and alcohol, conducting tobacco cessation campaigns, increasing the access for health care assistance is needed.

## REFERENCES

1. Park K. Park's Textbook of Preventive and Social medicine. 22<sup>nd</sup> edition. Jabalpur: M/s Banarsidas Bhanot Publisher; 2009. p.434 - 36.

2. World Health Organization. Global Status Report On Non-communicable Diseases 2014. Geneva: WHO, 2014. Available from [http://www.who.int/nmh/publications/ncd\\_report\\_full\\_en.pdf](http://www.who.int/nmh/publications/ncd_report_full_en.pdf) (Accessed on 2014-05-29)
3. Goswami A, Reddaiah VP, Kapoor SK, Singh B, Dwivedi SN, Kumar G. Tobacco and alcohol use in rural elderly Indian population. *Indian Journal of Psychiatry*. 2005;47(4):192-197.
4. Mundada V, Jadhav V, Gaikwad AV. Study of addiction problems and morbidity among geriatric population in rural area of Aurangabad district. *J Mid-life Health* 2013;4(3):172-5.
5. Gupta R, Sharma S, Gupta VP, et al. Smoking and alcohol intake in a rural Indian population and correlation with hypertension and coronary heart disease prevalence. *J Assoc Physicians India* 1995; 43:253-8.
6. Kandpal SD, Rakesh K, Aggarwal P, Sushil B. Pattern of prevalence of risk factors for non-communicable diseases in the geriatric population of district Dehradun. *J Indian A Clinical Med* July-Dec 2013;14(3-4):214-217.
7. Jadhav V.S, Mundada V.D, Gaikwad A.V, Doibale M.K, Kulkarni A.P. A Study of morbidity profile of geriatric population in the field practice area of rural health training centre, Paithan of govt. Medical college, Aurangabad. *IOSR. Journal of Pharmacy* Mar.-Apr. 2012, Vol. 2(2) pp: 184-188.
8. The MAST-G (Michigan Alcoholism Screening Test-Geriatric Version) <http://www.sbirtraining.com/sites/sbirtraining.com/files/MAST-G.pdf>. (Accessed on 2014-05-29)
9. Global Adult Tobacco Survey Collaborative Group. Tobacco Questions for Surveys: A Subset of Key Questions from the Global Adult Tobacco Survey (GATS), 2<sup>nd</sup> Edition. Atlanta, GA: Centre for Disease Control and Prevention, 2011. [http://www.who.int/tobacco/surveillance/en\\_tfi\\_tqs.pdf](http://www.who.int/tobacco/surveillance/en_tfi_tqs.pdf). (Accessed on 2014-05-29)
10. Gupta V, Yadav K, Anand K. Patterns of Tobacco Use Across Rural, Urban, & Urban-Slum Populations in a North Indian Community. *Indian Journal of Community Medicine* 2010;35(2):245-251.
11. Sharma R. Online interactive calculator for real-time update of the Prasad's social classification. Available at: [www.prasadscaleupdate.weebly.com](http://www.prasadscaleupdate.weebly.com) (Accessed on 2014-05-29).
12. Purohit CK, Sharma R. A study of general health status of persons aged 60 years & above in the rural health training centre area, Naila. *Indian J Med Res* 1976;64:202-10.
13. Goswami A, Reddaiah VP, Kapoor SK, Singh B, Dwivedi SN, Kumar G. Tobacco and alcohol use in rural elderly Indian population. *Indian Journal of Psychiatry*. 2005;47(4):192-197.
14. International Institute of Population Sciences (IIPS) and ORC Macro. National Family Health Survey, 1998-99. Mumbai: IIPS; 2001.
15. Lal S, Mohan B, Punia MS. Health and social status of senior citizens in rural areas. *Indian J Community Med* 1997;9:10-17.