Prevalence of Tobacco Consumption among Urban Tribals of Mandla District (M.P)

Authors
Dr Vishnu K. Gupta, Dr Parul Nema, Dr Neelam A. Toppo, Dr Pradeep Kasar
Dr Neeraj Rai
Corresponding Author
Dr Parul Nema
L-33 Madhav Nagar Lashkar Gwalior (M.P.) 474002- India
Email: drparulnema@gmail.com

Abstract
Introduction: Tobacco is one of the most common abuse substances all over the world. Tobacco leads to disease and disability and harms nearly every organ of the body. According to the World Health Organization (WHO), nearly 6 million deaths occur every year due to tobacco use. The majority of smoking related deaths in India occur in the prime working age group of 15–59 years. This study was aimed to find out the prevalence and pattern of tobacco use among urban tribal adult.

Methodology: A cross sectional study conducted among the randomly selected 561 tribal adults age 20yrs and above in 5 urban ward of mandla city from February 2015 to April 2016 by using a pre-tested proforma.

Results: Out of total, 41.5% subjects consume tobacco in any form while prevalence of smoking and tobacco chewing was 4.8% and 37.2% respectively. Mean age of starting of tobacco chewing and smoking was 21.7 yrs and 23.9 yrs respectively. Consumption significantly associated with gender, age, education, occupation, type of family and occupation status.

Conclusion: Prevalence of tobacco consumption high in urban tribal population. Required population based approach to control and reduce tobacco consumption in the country. Tobacco control programme needs to be intensively implemented in urban area also.

Keyword: Tobacco, urban, tribal.

Introduction
Tobacco is one of the most common abuse substances all over the world. Tobacco is consumed in different forms like smoking, tobacco chewing, sniffing etc. Tobacco contains a very powerful addictive chemical called nicotine which makes it very hard for tobacco users to stop using it. In present day Substance abuse is a serious public health problem and is one of the biggest curses that modern society has come across. Smoking tobacco leads to disease and disability and harms nearly every organ of the
body. (3) Smokeless tobacco contains nearly 3000 chemicals; out of them 28 are carcinogenic. Smokeless tobacco in any form (gutkha, kheni, gudaku) can lead to nicotine addiction, heart disease, stroke, low birth weight in pregnancy and associated with cancer of mouth, oesophagus, and pancreas. (4,5)

In India, tobacco consumption is responsible for half of all the cancers in men and a quarter of all cancers in women. (6) Tobacco consumption is one of the important risk factors for non-communicable diseases (NCD), accounts for more than two-third of all new cases of NCD. (7) According to the World Health Organization (WHO), nearly 6 million deaths occur every year due to tobacco use, which may escalate to 8 million deaths a year by 2030. (8)

India has highest number of tobacco user in the world and among fewer countries in the world where prevalence of smoking and smokeless tobacco use are high, and within noticeable proportion. According to National Family Health Survey second round (NFHS II, 1998–99), prevalence of tobacco use in India was estimated to be 37 percent among the population of 15 years and above. (9) Smoking is responsible for a large number of premature deaths in India. The majority of smoking related deaths in India occur in the prime working age group of 15–59 years. (10) NFHS 3 has reported a relatively higher prevalence of tobacco use in rural than in urban area, while the prevalence of tobacco use in tribal areas is still very high compared to rural and urban counterpart. (11-13) As per report of Tobacco Control in India (2004), more than 8-9 lakh death are directly or indirectly linked to tobacco consumption every year in India. The proportion of all deaths that can be attributed to tobacco use is expected to rise from 1.4% in 1990 to 13.3% in 2020, which will result in form of enormous economic, emotional and societal costs for nearly a billion of people. (14)

Very few community-based studies have been conducted on the prevalence of tobacco among tribals in India. Most of the studies are conducted in rural population. This study was aimed to find out the prevalence and pattern of tobacco use among urban tribal adult. Studies will be useful for understanding the problem of tobacco consumption and for taking specific interventional measures at the community level.

Methodology

This study is a cross sectional study carried out from February 2015 to April 2016 in randomly selected 5 ward out of 24 ward of Mandla city of Madhya Pradesh among 561 subjects belonging to the age group of 20 yrs and above. Sample size was calculated using formula where: Sample size (N)=Z^2 PQ/L^2 with a prevalence of 43.3% (15) and 95% Confidence Interval, Margin of error of 10% of prevalence, a sample size of 501 was worked out. Adding 12% non-respondents, a minimum sample size of 561 was calculated.

The number of subjects to be interviewed from each ward was determined on the basis population proportion. Individuals of age 20 years and above were selected randomly and interviewed. Individuals who have not given consent for the interview or severely ill were excluded from the study. The data was collected on a predesigned proforma, which includes age, sex, socio-demographic, type of tobacco consumed, frequency per day, amount and age of initiation. It was modified after a pilot study conducted on 30 study subjects. The socioeconomic status of the study subjects was determined as per the modified B. G. Prasad’s classification may 2014. The statistical analysis was carried out by using Epi Info™ 7.1.5 and SPSS for windows version 20.

Result

Out of total study subject 52.5% were male. Mean age was 38.6 of male and 38.2 yrs of female, maximum study subjects belong to age group 20-29 (31.6%) followed by 30-39yrs (27.9%). Mean age of men and women were 38.6yrs and 38.2yrs respectively. Nearly 80% were married followed by 13.7% unmarried. 20.5% study subjects were illiterate, and among educated maximum had
studied up to intermediate level. Out of total study subjects 47.2% unemployed and about 60% lived in joint family. Maximum subjects belong to lower middle (28.2%) class followed by upper class (20.3%).

Out of total, 41.5% subjects consume tobacco in any form while prevalence of smoking and tobacco chewing was 4.8% and 37.2% respectively. Only 0.5% individuals consume both form of tobacco. Mean age of starting of tobacco chewing and smoking was 21.7 yrs and 23.9 yrs respectively. Distribution of smoking and tobacco chewing is given in table 1 and 2.

Prevalence of tobacco chewing, among male and female was 57.5% and 24% respectively. Among different age groups maximum prevalence was found in above 60-65 yrs of age (70.9%), followed by 40-49 yrs (47.5%). Marital relationships also influence the consumption of tobacco, it was maximum (61.8%) among widow and minimum (28.6%) among unmarried. Education also influences tobacco consumption, maximum subject who consume tobacco were educated less than or up to high school. Occupation significantly associated with tobacco consumption, highest prevalence in skilled and semiskilled person while minimum among professionals. Joint families (54.1%) were significantly associated with tobacco consumption. Tobacco consumption was common in low income group as found in this study.

Table-1 Distribution of subjects according to habit of smoking and living status

| Parameters                                | Yes    | No     |
|-------------------------------------------|--------|--------|
| History of smoking of tobacco             | 27(4.8%) | 534(95.2%) |
| Mean age of initiation (year)             | 23.9    |        |
| Mean duration of addiction (year)         | 31.6    |        |
| Frequency                                 | N=27    |        |
| Type of smoking                           | Bidi    | 18(66.7%) |
|                                          | Cigarette | 9(33.3%) |
|                                          | Others  | 0(0.0%)  |
| Units consumed per day                    | N=27    |        |
| >15/day                                   | 2(7.4%)  |        |
| 5-15/day                                  | 6(22.2%) |        |
| <5 day                                    | 19(70.4%) |       |

Table-2 Distribution of subjects according to habit of smokeless tobacco and living status

| Parameters                                | Yes    | No     |
|-------------------------------------------|--------|--------|
| Smokeless tobacco                         | 209(37.2%) | 352(62.8%) |
| Mean age of initiation(year)              | 21.7    |        |
| Mean duration of addiction (year)         | 18.4    |        |
| Frequency                                 | N=209   |        |
| Type of tobacco chewing                   | Kheni   | 41.2%   |
|                                          | Gutkha  | 34.7%   |
|                                          | Both    | 24.1%   |
| Frequency per day                         | N=209   |        |
| >15/day                                   | 4(1.9%)  |        |
| 5-15/day                                  | 62(29.7%)|        |
| <5/day                                    | 143(68.4%)|       |
| Amount per day                            | N=209   |        |
| <10gm                                     | 186(89.0%)|       |
| ≥10gm                                     | 23(11.0%) |       |
| Factor                | Variable                      | Yes       | No       | Total | Chi Test  |
|----------------------|-------------------------------|-----------|----------|-------|-----------|
| **Gender**           | Male                          | 169       | 125      | 294   | χ²=64.7, df-1 p<.000 |
|                      | Female                        | 64        | 203      | 267   |           |
| **Age**              | 20-29                         | 62        | 115      | 177   | χ²=26.69, df-4 p<.000 |
|                      | 30-39                         | 59        | 93       | 152   |           |
|                      | 40-49                         | 47        | 52       | 99    |           |
|                      | 50-59                         | 26        | 52       | 78    |           |
|                      | 60-65                         | 39        | 16       | 55    |           |
| **Marital status**   | Married                       | 189       | 259      | 448   | χ²=11.19, df-3 p<.011 |
|                      | Unmarried                     | 22        | 55       | 77    |           |
|                      | Divorce                       | 1         | 1        | 2     |           |
|                      | Widower                       | 21        | 13       | 34    |           |
| **Education status** | Professional Degree           | 1         | 4        | 5     |           |
|                      | Post Graduate And Above       | 8         | 14       | 22    |           |
|                      | Graduate                      | 24        | 54       | 78    |           |
|                      | Inter Mediate Or Post High School Diploma | 35      | 80       | 115   |           |
|                      | High School Certificate       | 29        | 30       | 59    | χ²=19.19, df-8 p<.014 |
|                      | Middle School                | 47        | 42       | 89    |           |
|                      | Primary School               | 21        | 22       | 43    |           |
|                      | Literate                      | 14        | 21       | 35    |           |
|                      | Illiterate                    | 54        | 61       | 115   |           |
| **Occupation**       | Professional                  | 5         | 15       | 20    | χ²=68.7, df-8 p=.000 |
|                      | semi-professional             | 17        | 17       | 34    |           |
|                      | Clerks                        | 21        | 13       | 34    |           |
|                      | Shopkeeper                    | 12        | 8        | 20    |           |
|                      | Farmer                        | 17        | 17       | 34    |           |
|                      | Skilled                       | 30        | 12       | 42    |           |
|                      | semi skilled                  | 21        | 13       | 34    |           |
|                      | Unskilled                     | 43        | 35       | 78    |           |
|                      | Unemployed                    | 67        | 198      | 265   |           |
| **Type of family**   | Joint                         | 60        | 51       | 111   | χ²=14.460, df-2 p=.001 |
|                      | Nuclear                       | 116       | 214      | 330   |           |
|                      | Three generation              | 57        | 63       | 120   |           |
| **Socioeconomic status** (prashad category) | 1 upper class                 | 34        | 80       | 114   |           |
|                      | 2 upper middle class          | 48        | 44       | 92    |           |
|                      | 3 middle class                | 25        | 86       | 111   |           |
|                      | 4 lower middle class          | 68        | 90       | 158   |           |
|                      | 5 lower class                 | 58        | 53       | 111   |           |
Discussion
Prevalence of any type of tobacco consumption is 41.5% in urban tribal population in study area. Prevalence is slightly less as compared to study done by Verma P et al\(^{(15)}\) (43.28%) in rural area of similar district in age group 15 year age and above. Prevalence found in this study is also less as compared to current tobacco user 55.8% in National Household Survey of Drug and Alcohol Abuse in India.\(^{(16)}\) Global Adult Tobacco Survey (2009-10) report found 34.6% prevalence of any form of tobacco use among 15 years and older which was less as compared to our study.\(^{(17)}\) NFHS-4 reports the prevalence of any forms of tobacco use as 59.5% in men and 10.4% in women in the age group of 13 to 49 years in Madhya Pradesh while in our study area it was found to be 57.5% among male and 24.0% among females. Prevalence is more as compared to NFHS-3 survey which reported 16.6% among women and 41.2% among men aged 15-54 years in Mumbai, India.\(^{(18)}\) But result of this study is slightly higher as compared to prevalence found in GATS India survey, which was 48% in men and 20% in women among individuals aged 15 years or older\(^{(19)}\).

Prevalence of tobacco consumption increase with age and association is significant with different age groups, this result was similar to study done by Verma P et al\(^{(15)}\) and A. Singh etal\(^{(20)}\). Tobacco consumption is significantly associated with relationship status of subjects, more among widow and divorcee, this result was different from Verma P et al study\(^{(15)}\) where it was more common in married individuals. Education status was significantly associated with consumption habit, similar result found in study done by Verma et al and also in study done by Garg A. et al\(^{(21)}\) among a resettled colony in Delhi for smoking. Tobacco consumption is significantly associated with occupation, it was highest among skilled person and lowest among professionals, results are similar to study done by Garg A. et al\(^{(21)}\) they also found high smoking prevalence among skilled person. Socioeconomic status significantly associated with consumption in this study, consumption is more among low income groups similar to a study done by A. Singh et al\(^{(20)}\) and Garg A. et al.\(^{(21)}\)

References
1. Bonnie RJ, Lynch BS, editors. Growing up tobacco free: preventing nicotine addiction in children and youths. National Academies Press; 1994 Feb 1. available at https://www.ncbi.nlm.nih.gov/books/NBK 236759/ cited 26/12/2017
2. Suryakantha AH. Community medicine with recent advances. 3rd edition. Jaypee Brothers Medical Publishers (P) LTD; 2016: 916.
3. U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.
4. Stanfill SB, Connolly GN, Zhang L, Jia LT, Henningfield JE, Richter P, et al Global Surveillance of Oral Tobacco Products: Total Nicotine, Unionised Nicotine and Tobacco – Specific N- Nitrosamines. Tobacco Control 2011;20(3):2.
5. Chaudhry K, Prabhakar AK, Luthra UK. Tobacco control in India- search for strategies. In: Durston B, Jamrozik K, editors. The Global war; proceedings of the seventh world conference on tobacco and health, Perth, Western Australia, 1990. p. 363-6.
6. WHO. Tobacco or health: a global status report. Geneva: World Health Organization, 1997.
7. World Health Organization Factsheet on Tobacco No. 339, 2011. Available at: http://www.who.int/
mediacentre/factsheets/fs339/en/.
Accessed on 4 January 2017.

8. World Health Organization (2008) WHO report on the global tobacco epidemic, 2008: The MPOWER package. Geneva: World Health Organization.

9. Rani M, Bonu S, Jha P, Nguyen SN, Jamjoum L (2003) Tobacco use in India: Prevalence and predictors of smoking and chewing in a national cross sectional household survey. Tob Control 12:e4 doi:10.1136/tc.12.4.e4.

10. Jha P, Jacob B, Gajalakshmi V, Gupta PC, Dhingra N, et al. (2008) A nationally representative case-control study of smoking and death in India. N Engl J Med 358(11):1137–1147.

11. Mohan S, Sarma PS. NFHS - 3 (2005-2006). Available at: http://www.whoindia.org/Link Files/Tobaccofree_Initiative__nfhs3.pdf. Accessed on 7 January 2017.

12. Mohan S, Sarma PS, Thankappan KR. Access to pocket money and low educational performance predict tobacco use among adolescent boys in Kerala, India. Prevent Med. 2005;41(2):685–92.

13. Jayakrishnan R, Sreekumar C, Sarma S. Tobacco use and Smoking Dependency among the District Tribal Population of Kerala State. Available from: http://www.sctimst.ac.in/amchss/Smoking_depende ncy.pdf. Accessed on 14 March 2016.

14. Reddy KS, Gupta PC. Tobacco control in India. New Delhi: Ministry of Health and Family Welfare, Govt of India 2004.

15. Verma P, Saklecha D, Kasar PK. A study on prevalence of tobacco consumption in tribal district of Madhya Pradesh. International Journal Of Community Medicine And Public Health. 2017 Dec 23;5(1):76-80.

16. Srivastava A, Pal H, Dwivedi SN, Pandey A, Pande JN (2004) National Household Survey of Drug and Alcohol Abuse in India (NHSDAA). New Delhi: Ministry of Social Justice and Empowerment, Govt of India and Regional Office of South Asia: UN Office for Drug and Crime.

17. Global Adult Tobacco Survey (GATS) Factsheet India 2009-2010 Available at http://www.who.int/tobacco/surveillance/en_tfi_indi a_gats_fact_sheet.pdf. Accessed on 4 July 2016.

18. Bhat PN, Arnold F, Gupta K, Kishore S, Parasaruman S, Arokiosamy P, et al. National Family Health Survey (NFHS-3), 2005-06, India. 1st ed. I. Mumbai: International Institute for Population Sciences (IIPS) and Macro International; 2007. [Last accessed on 2014 Oct 15]. Morbidity and health care; p. 43. Available from: http://www.pdf.usaid.gov/pdf_docs/PNADK385.pdf. [Ref list]]

19. Giovino GA, Mirza SA, Samet JM, Gupta PC, Jarvis MJ, Bhala N, et al. Tobacco use in 3 billion individuals from 16 countries: An analysis of nationally representative cross-sectional household surveys. Lancet 2012;380:668–79.

20. Singh A, Ladusingh L. Prevalence and Determinants of Tobacco Use in India: Evidence from Recent Global Adult Tobacco Survey Data. Gorlova OY, ed. PLoS ONE. 2014;9(12):e114073. doi:10.1371/journal.pone.0114073.)

21. Garg A, Singh MM, Gupta VK, Garg S, Daga MK, Saha R. Prevalence and correlates of tobacco smoking, awareness of hazards, and quitting behavior among persons aged 30 years or above in a resettlement colony of Delhi, India. Lung India: Official Organ of Indian Chest Society. 2012 Oct;29(4):336.