

A STUDY ON TOBACCO USE AND NICOTINE DEPENDENCE AMONG PLYWOOD INDUSTRY WORKERS IN MANGALORE CITYShoeeb Akram¹, Gururaj N. A², Abhay S. Nirgude³, Soumya Shetty⁴**HOW TO CITE THIS ARTICLE:**

Shoeeb Akram, Gururaj N. A, Abhay S. Nirgude, Soumya Shetty. "A Study on Tobacco use and Nicotine Dependence among Plywood Industry Workers in Mangalore City". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 33, April 23; Page: 5729-5735, DOI: 10.14260/jemds/2015/837

ABSTRACT: BACKGROUND: Ill effects of tobacco usage have greater impact on economic productivity of industrial workers. **OBJECTIVE:** To assess pattern of tobacco use, nicotine dependence and its associated factors among industrial workers. **METHODS:** A Descriptive study was conducted for a period of two months among industrial workers aged 18 years and above in a selected wood and plywood industry in Mangalore city. Data was collected using a predesigned and pretested structured proforma. The WHO STEPS Instrument and Fagerstrom test was used to assess tobacco use pattern and the nicotine dependence respectively. **RESULTS:** Overall Tobacco usage was 53.7%. Smoking and tobacco chewing form used were 11.9% and 41.8% respectively. Manufactured cigarettes and Khaini were the commonest form of smoking and tobacco chewing respectively. Mean age of onset of smoking was 21 years. **CONCLUSION:** More than half of workers use Tobacco in different forms which is very high compared to general population. Age, Poor education and low socio economic status were found to be associated with tobacco use.

KEYWORDS: Tobacco use; Industrial workers; Nicotine dependence.

INTRODUCTION: Tobacco use is the leading cause of preventable and premature death in the World, resulting in millions of deaths annually. Tobacco use is a serious public Health problem in India. Rates of Tobacco related deaths are rising. Currently, tobacco causes about 1 in 20 deaths and 1 in 5 deaths among women and men between the ages of 30-69 respectively.¹ According to WHO by 2020, tobacco use will be responsible for 13.3% of all deaths in India. In India, smoking accounts for 7 lakhs deaths annually and 8 to 9 lakhs deaths annually due to all forms of tobacco use/exposure, many of the deaths occur below 70 years of age (>50%).¹

There are 10 cases of oral cancer per 10,000 men in the population which is one of the highest rates in the world, 65% and 33% of the cancers among men and women respectively are tobacco related and about a quarter of deaths among middle aged men (26-29 years) are smoking related.¹

Tobacco use in its various forms is directly responsible for increase in cardiovascular diseases, cancers of oral cavity, lungs, esophagus, pharynx etc. and chronic obstructive lung diseases, TB, poor reproductive health outcomes and Green tobacco sickness. Prevalence of TB is about 3 times as great among the ever smokers as among the never smokers and number of smoking related deaths from TB is 10 times higher than the number of smoking related deaths from lung cancer.¹

Tobacco contains nicotine and 4000 other chemicals, nicotine dependence reflects compulsive use of nicotine containing tobacco, physiologic tolerance (Needing to use increase amounts of nicotine to achieve desired effects) nicotine withdrawal upon discontinuation (Symptoms: craving, irritability, anger, anxiety, depression, increased appetite) and continued use despite significant problems related to its use (example: Health problems).²

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Nowadays smoking is an important issue in occupational medicine, smoking is recognized as additional risk factor for health among industrial workers as it has been demonstrated that tobacco smoke can interact with other occupational or non occupational carcinogens and can increase the risk of developing lung cancer in a multiplicative manner. Environmental tobacco smoke is also a key issue in contemporary occupational health, there is evidence that passive smoke in work place is a significant risk factor for lung cancer.³

Besides the effect of tobacco use on workers health, tobacco use causes significant economic costs due to increased absenteeism and reduced productivity.⁴ So the control of workers tobacco use is a crucial point of health promotion in the work place. The job related disparities in the prevalence of smoking are a real challenge for the initiatives to control the smoking habits in the work place. Socioeconomic factors also influences the tobacco use worldwide.

OBJECTIVES:

1. To study the pattern of tobacco use and its associated risk factors among the industrial workers of a selected industry in Mangalore city.
2. To assess the nicotine dependence among tobacco users.

METHODOLOGY:

Study Setting: A descriptive study was conducted using a predesigned and pretested structured proforma. The study was conducted among all industrial workers aged 18yrs and above in a selected Wood and Plywood industry located in Mangaluru city among 134 workers for a period of two months (October 2013 to November 2013).

Inclusion Criteria: All those Industrial workers willing to participate in the study.

Exclusion Criteria: Workers who are mentally challenged if any would be excluded.

Ethical Clearance Permission: Institutional ethical committee approval was obtained before beginning the study. Necessary permission to conduct the study was obtained from the concerned authority of the Industry. Written informed consent were obtained from the respondents after explaining the nature and objectives of the study in their local language.

Study Variables: Outcome variables: Percentage of respondents who currently smoke tobacco/use smokeless tobacco.

Predictor Variables: Education, Occupation, Age, Socio-economic status, Religion.

Study Tools: A predesigned, pretested questionnaire was used to collect data about Socio demographic details. WHO STEPS questionnaire was used to collect data about tobacco use and its pattern, duration of tobacco use, present and past history of smoking, quantity of tobacco use, information regarding second hand smoke. Nicotine dependence was assessed using Fagerstrom test among tobacco users which consists of six framed questions.

Method of Data Collection: Data was collected by face to face Interview method using WHO STEPS Questionnaire⁵ on tobacco use and Nicotine dependence using Fagerstrom Test⁶ for Nicotine dependence. The Questionnaire was anonymous and anonymity had been maintained.

Statistical Analysis: The data was analyzed using SPSS 15.0 version and the results were presented in descriptive statistics as frequency, percentage, mean. Univariate and multivariate logistic regression were applied to find the association between the independent and dependent variables.

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RESULTS: The prevalence of tobacco usage among the industrial workers found to be around 53.7 %. Prevalence of smoking, tobacco chewing and mixed (Smoking/ Tobacco Chewing) was found to be 11.9%, 41.8% and 5.22% respectively which is illustrated in Fig. 2.

Fig. 3 shows the nicotine dependence among smokers using Fagerstrom test. Among smokers 9.7% of industrial workers have high level of nicotine dependence and 2.23% of industrial workers have moderate level of nicotine dependence.

Fig. 4 illustrates age wise distribution of smokers and smokeless tobacco users. Fifty three percent of smokeless tobacco users and 50% of smokers are of 18-28 years of age. Ten percent of smokeless tobacco users and 18.8% of smokers belong to the age group of 49-58 years.

Table 1 showing current usage of specific tobacco products by tobacco users among the industrial workers. Among tobacco smokers 9.7% (13) of industrial workers using manufactured cigarette and 22.4% (33) were using smokeless tobacco product in the form of Khaini.

Table 2 showing socio-demographic characteristics of study participants. Out of 132 industrial workers 122 were literate and 10 were illiterate. Among them 45 percent of literate industrial workers and 83 percent of illiterate industrial workers were consuming tobacco products and was found to be statistically significant ($p < 0.005$). In this study 75 individuals were company workers and 59 individuals were contract workers. Among them 40 percent of company workers and 60 percent of contract workers were with the habit of consuming tobacco products which was also found to be statistically significant ($p < 0.005$).

Three out of 21(14%) belonging to lower middle class and sixty two out of 113(55%) belonging to upper middle class were having the habit of consuming tobacco products and was found statistically significant ($p < 0.005$). Fifty out of 90(56%) who were of less than 40 years of age and fifteen out of 44(34%) who were of more than or equal to 40 years of age were having the habit of consuming tobacco products and was found statistically significant ($p < 0.05$). In this study sixty one out of 117(52%) belonging to Hindu by religion and four out of 17(23%) from other religion (Christian /Muslim) were having the habit of consuming tobacco products and was found statistically significant ($p < 0.05$).

Table 3 showing multivariate logistic regression analysis of factors associated with tobacco usage. Age, Poor Education and Low socio economic status were the factors independently associated with tobacco use.

DISCUSSION: The prevalence of tobacco usage in our study among wood and plywood industrial workers was found to be 53.7%. Prevalence of smoking, tobacco chewing was found to be 11.9% and 41.8% respectively. Zaki Anwar Ansari et.al⁷ estimated the prevalence of tobacco use among power loom workers in Mau Aima Town, Allahabad district was 85.9% and the prevalence of smoking and tobacco chewing among them were 62.28% and 66.07% respectively.

In our study we found that among tobacco smokers, 9.7% (13) of industrial workers were using manufactured cigarettes and 22.4% (33) were using smokeless tobacco product in the form of Khaini. A similar study conducted by Payal S.Laad. et al⁸ to assess the prevalence of substance use among construction workers found out that prevalence of smoke and non smoke form of tobacco was 21.6% and 46.1% respectively, more than half (58.3%) of those smoking tobacco were using bidi (Hand rolled) and third (32.4%) were using manufactured cigarettes, among the smokeless tobacco users 49.7% were using Khaini(Tobacco with Lime), 33% were using Gutka and 9.3% were using both Khaini and Gutka. Madhu B.Singh.et al⁷ in their study on textile workers engaged in textile

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industries of desert districts of Rajasthan found that among textile groups (51.4%) percent workers were smokers when compared to comparative group (46.8%), smoking Beeri and consuming Gutka were higher in textile group (25% and 30.1%) than comparative group (16.7 and 24.8%). Manimunda et al⁹ in his study done on the representative sample of individuals in Andaman and Nicobar islands, India had used Fagerström Test for Nicotine Dependence (FTND) to estimate nicotine dependence with prevalence of current tobacco use in any form was 48.9% (95% CI: 48.2–49.6), the prevalence of tobacco chewing alone was in 40.9% (95% CI: 40.1–41.6). Nicotine dependence was seen among one tenth of males (9.7%, 95% CI: 9.1–10.4), whereas it was only 3% (95% CI: 2.7–3.4) among females.

CONCLUSION: More than half of industrial workers are using tobacco in smoking and smokeless forms which is very high compared to general population. There is a need for continuous tobacco awareness programmes in industries, periodic general health checkup and lung function tests and also referral of workers using tobacco to de addiction centres. Immediate intervention programs are warranted to reduce the future burden of tobacco use-related morbidity among these workers who are already exposed to the high pollution levels in wood and plywood factories. Age, Poor Education and Low socio economic status were the factors independently associated with tobacco use.

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REFERENCES:

1. Global Business Group on Health. Tobacco use and Cessation: India; July 18, 2012.
2. WHO (2009). WHO Report on the Global Tobacco Epidemic. World Health Organization. http://www.who.int/tobacco/global_report/2009/en/index.html. Last assessed on [Jan 29th, 2015].
3. Campaign for Tobacco-free Kids. India: Tobacco Burden and Facts. February 2011. http://tobaccofreecenter.org/files/pdfs/en/India_tob_burden_en.pdf. Last Accessed on [Jan 29th, 2015].
4. Gaafar MA, Basiony LA (2013) Pattern of Smoking Habit and Quit Attempts among Industrial Workers in Kuwait. *Occup Med Health Aff* 1: 115. doi:10.4172/omha.1000115.
5. Jhanjee S, Sethi M. The Fagerstrom test for nicotine dependence in an Indian sample of daily smokers with poly drug use. *Nicotine & Tobacco Research*. 2010 Nov Vol 12(11); 1162-66.
6. The WHO STEP wise approach to chronic disease risk factor surveillance (STEPS). Available from: <http://www.who.int/chp/steps/en/>. Last Accessed on [Jan 29th, 2015].
7. Ansari Z.A, Bano S.N, Zulkifle M. Prevalence of Tobacco use among Power loom workers-A Cross Sectional Study. *Indian J Community Med*. 2010 January; 35(1).
8. Laad P S, Adsul B.B, Chaturvedi R.M, Shaikh M. Prevalence of Substance Abuse Among Construction Workers. *PARIPEX-Indian Journal of Research*. 2013 March; 2(3).
9. Manimunda et al. Tobacco use and nicotine dependency in a cross-sectional representative sample of 18, 018 individuals in Andaman and Nicobar Islands, India. *BMC Public Health* 2012 12; 515.

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Fig. 1: Prevalence of Tobacco usage (Smoking and smokeless) among industrial workers.

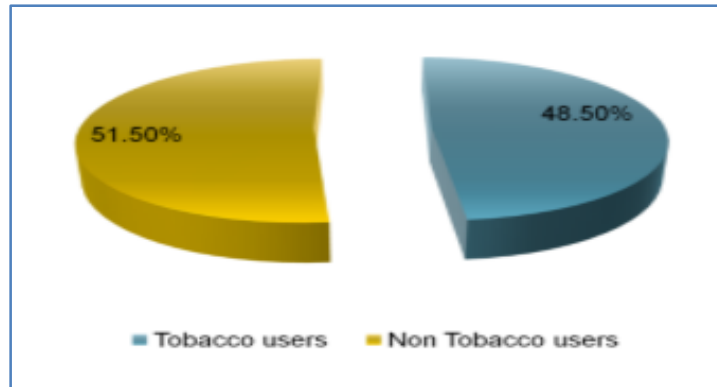


Fig. 1

Fig. 2: Pattern of Tobacco Use among the Study Subjects.

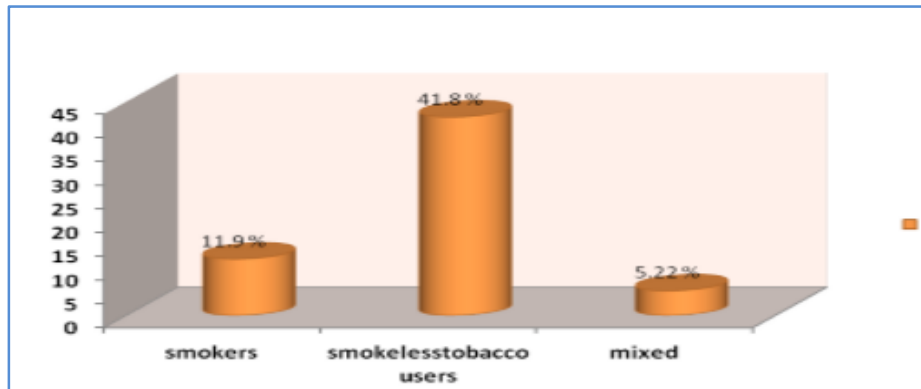


Fig. 2

Fig. 3: Nicotine dependence among smokers.

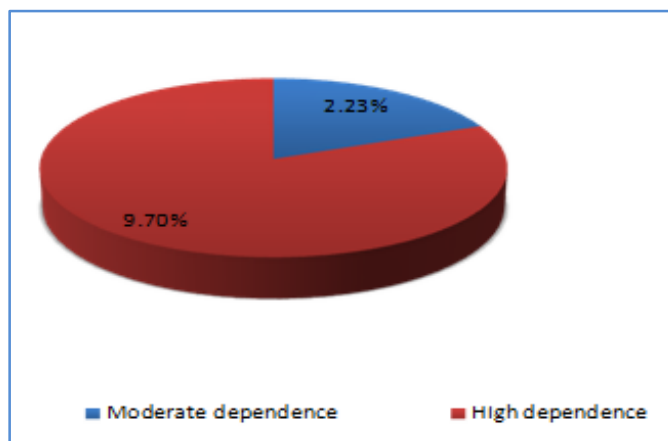


Fig. 3

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Fig. 4: Age wise distribution of smokers and smokeless tobacco users.

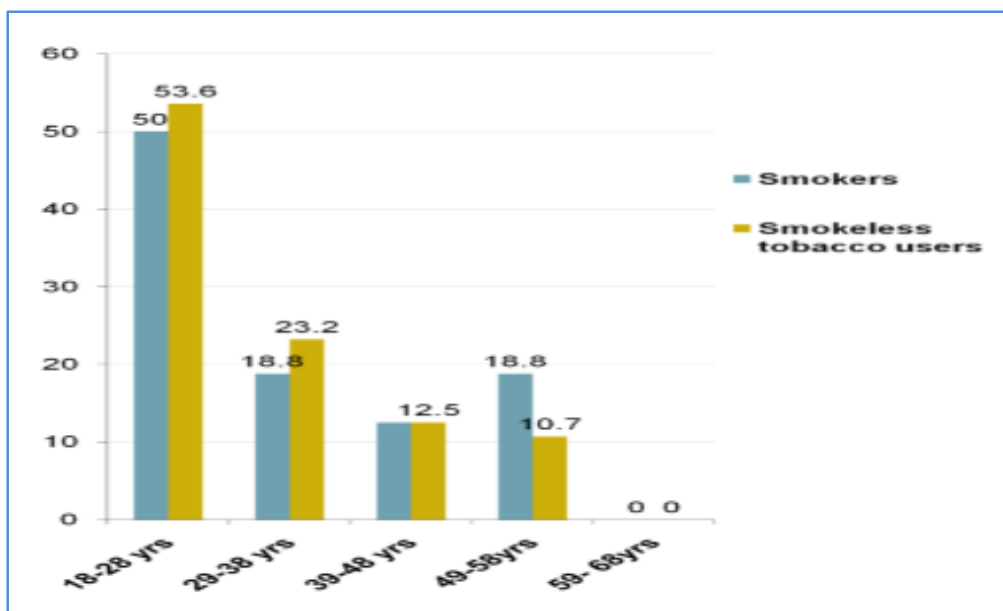


Fig. 4

Tobacco products	Frequency	Percentage (%)
Smoke Tobacco Product		
a. Manufactured cigarettes	13	9.7
b. Bidi	03	2.2
Smokeless Tobacco Product		
a. Khaini	33	24.6
b. Gutka	20	14.9
c. Paan	03	2.2

Table 1: Current use of specific Tobacco products among Tobacco users

Variables	Tobacco use		95% CI		P value
	Yes	No	Lower	Upper	
Education					
1. Literate	55(45.1%)	67(54.4%)	0.035	0.781	<0.05
2. Illiterate	10(83.3%)	02(16.7%)			
Occupation					
1. Company workers	30(40%)	45(60%)	0.228	0.916	<0.05
2. Contract workers	35(59.3%)	24(40.7%)			
Socio-economic status					
1. Lower middle	03(14.2%)	18(85.7%)	0.038	0.492	<0.05
2. Upper lower	62(54.8%)	51(45.1%)			

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Age (in years)					
1. Less than 40	50(55.6%)	40(44.4%)	1.142	5.112	<0.05
2. More than or equal to 40	15(34.1%)	29(65.9%)			
Religion					
Hindu	61(52.1%)	56(47.9%)	1.090	11.497	<0.05
Others (Muslim/Chritian)	04(23.5%)	13(76.5%)			

Table 2: Univariate analysis of Factors associated with Tobacco use

Variable	Adjusted OR	95% Confidence Interval	P value	
Literate Vs Illiterate	0.220	0.044	1.099	0.065
Hindu Vs Others	2.426	0.664	8.867	0.180
Age less than 40 Vs more than 40	2.970	0.996	8.862	0.051
Lower middle Socio-economic status Vs Upper lower	0.187	0.049	0.714	0.014
Company workers Vs Contract workers	0.804	0.366	1.766	0.586

Table 3: Multivariate logistic regression analysis of factors associated with Tobacco use

AUTHORS:

1. Shoeeb Akram
2. Gururaj N. A.
3. Abhay S. Nirgude
4. Soumya Shetty

PARTICULARS OF CONTRIBUTORS:

1. Post Graduate Student, Department of Community Medicine, Yenepoya Medical College, Mangalore.
2. Assistant Professor, Department of Community Medicine, Yenepoya Medical College, Mangalore.
3. Professor and HOD, Department of Community Medicine, Yenepoya Medical College, Mangalore.

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4. Bio-Statistician, Department of Community Medicine, Yenepoya Medical College, Mangalore.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Gururaj N. A,
Assistant Professor,
Department of Community Medicine,
Yenepoya Medical College,
Yenepoya University,
Mangalore-575018.
E-mail: gnandihal@gmail.com

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