



# Smoking on Road: Behavioural and Physical Changes

Shridhar Dwivedi<sup>1</sup> and Anika Sulania<sup>2</sup>

<sup>1</sup>Department of Medicine/Preventive Cardiology, HIMSR, Associated HAH - Centenary Hospital, Jamia Hamdard, INDIA

<sup>2</sup>Department of Community medicine, North DMC Medical College & HRH, Delhi, INDIA.

## ABSTRACT

**Introduction:** Tobacco smoking is one of the leading causes of premature mortality and morbidity. It is currently responsible for death of about 5 million people across the world each year with many of these deaths occurring prematurely. Smoking on road is not only injurious to health, also makes the person prone to accidents and indirectly to so many by second hand and third hand smoking. **Aims and Objectives:** 1. To study the newer behavioral changes which have occurred along with smoking on road. 2. To study various socio-economic groups and obvious physical signs like central obesity and or greying in these subjects. **Materials and Methods:** The study is an observational study done on New Delhi-NCR roads by observing the people who smoke on road openly and the behavioral changes which are associated with smoking. A total of 300 study subjects were studied for this study. **Results and summary:** 53% of the study population was found to be smoking cigarette. Of all the study subjects almost 35% were found to be smoking while standing followed by (22%) smoking and just walking. Subjects were also noted to be smoking and drinking tea (4%), smoking and driving (12.3%), talking over mobile phone (1.7%), near children (2.7%).

**Key words:** Behavioral changes, Premature greying of hair, Second hand smoking, Third hand smoking, Tobacco smoking.

## BACKGROUND

Tobacco smoking is the single risk factor for many diseases. Smoking is one of the major cause of cancer of lung, larynx, oral cavity and of cardiovascular diseases and respiratory diseases namely chronic obstructive pulmonary diseases.<sup>1-3</sup> Not only it affects the person who is smoking, it also affect the other non-smokers by second and third hand smoking. Also smoking in the antenatal period gravely affects the outcome of pregnancy leads to conditions such as premature birth, still birth and spontaneous abortion etc.

The WHO estimates that approximately 12 per cent of global deaths are due to smoking – about 5 million deaths.<sup>4</sup> It is estimated by WHO that, 47% of men and 12% of the women smoke.

If we consider the scenario in India annually, there are 8, 00,000 new cancer cases in India. Tobacco-related cancer itself contributes to 40-50 per cent of cases in India. 1, 60,000 approx. people develop cancer each year as a result of tobacco consumption. The total mortality on India is estimated to reach 6, 66,563 by 2015-the facts are appareling but true.

### Corresponding Author :

Dr. Anika Sulania

Senior resident, Department of Community medicine,  
North DMC Medical College and HRH, Delhi, INDIA.  
E-mail: ani.sulania@gmail.com

DOI : 10.5530/PTB.1.2.10

There are many factors responsible for the initiation of tobacco smoking. Few important of these factors are peer pressure, risk taking behaviors among adolescents and adults ,role modeling by parents or any adults, freely availability of tobacco products etc.

Many studies are available globally which points out the association of tobacco smoking and increasing morbidity and mortality among smokers, but few studies are there to prove that how this habit have become the part of everyday activities. People smokes while driving, rag picking, selling vegetables/fruits, travelling, drinking tea and walking etc. This study was planned to study precisely these newer behavioral changes which have occurred during last 1-2 decades.

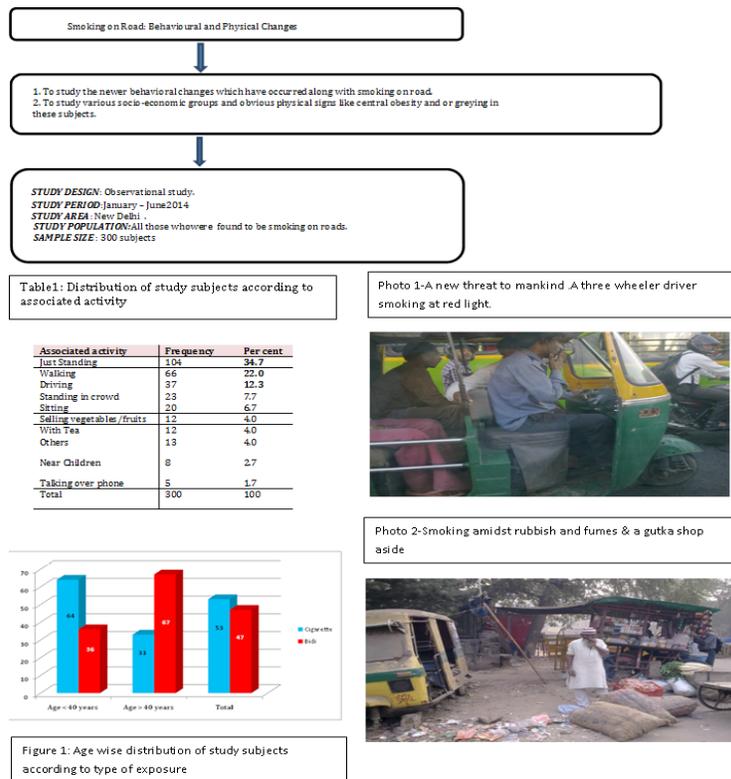
## MATERIALS AND METHODS

### Study Design

This was an observational study done on road between East Delhi and South East Delhi area during 9-10 am on the roads carried out observing people who were found smoking on the roads. The aim was to assess the various newer behavioral changes which have occurred along with smoking on road and to study social groups like peer group, role models and others who openly smoke on the road.

### The Study Period

The study was carried out in the months from January to June 2014.



**Graphical Abstract**

**Sampling and Sample size**

A total of 300 sample size was taken on the pilot basis for the study. Inclusion Criteria: All those who found smoking on the roads. Exclusion Criteria: Those who were not found to be smoking on the road.

**Study instruments**

Observations were made on the road observing the study subjects. The following points were noted (By observer on the basis of his more than 40 years in clinical practice).

1. Approximate age (Divided in less than 40 years and more than 40 years, young adult or old adults)
2. Socioeconomic status (Taking into consideration their appearance which includes dressing, driving, appearance as a proxy indicator of richness)
3. Type of exposure (Smoking bidi or cigarette)
4. Physical characters:
  - a) Central obesity (definite bulge in midriff)
  - b) Greying of hairs and
  - c) Baldness

6. Accompanying factors:

Smoking associated with any other behavioral change such as talking over mobile, smoking as well as driving, smoking in close proximity with children, smoking and crossing the road in midst of traffic, smoking near hospitals, schools or main crossings.

**RESULTS**

Total 300 study subjects were observed for the study. Study population was divided into young adults (<40 years) and old adults (>40 years). Of total study population young adults population consists of 64% and old adults were of 36% respectively. Half (50.6%) of the study population belonged to middle socioeconomic class followed by lower (48%) as shown in (Table 1). Total of 53 % of the study subjects were found to be smoking cigarette. Central obesity was found to be present in 46%, greying of hairs in 40% and baldness in 32 % of the study subjects (Figure 1).

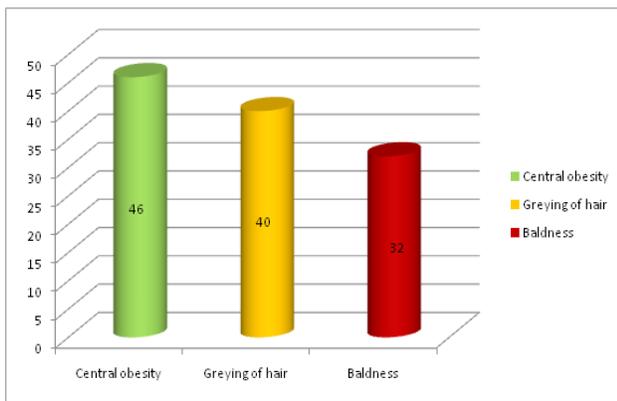
On observing distribution of the study subjects for associated activities along with smoking it was found out that 35% were found to be smoking with just standing. Walking and crossing roads while smoking were found in 22% of the study subjects. 12% of the study subjects were found to be even driving and smoking. Approximately 8% were found to be smoking an standing in crowd, 7% sitting and smoking, 4% selling fruits/vegetables, 4% while drinking tea and smoking, 3% were smoking near children. 2% talking over phone and smoking. Over 45 of the study subjects were found to be smoking while accompanying drivers, drinking tea and talking over phone and in hospitals which is supposedly a no smoking zone (Table 2).

**DISCUSSION**

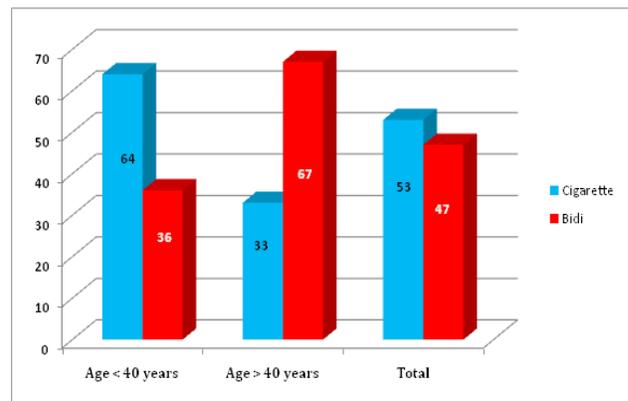
Tobacco it has assumed the dimension of an epidemic resulting in enormous disability, disease and death. It is estimated that five million preventable deaths occur every year globally, attributable to tobacco use. The big question is there some ways by which we can identify such people and can we do something to prevent the tobacco induced catastrophic. One of the possible way is to identify

**Table 1: Sociodemographic characteristic of study population**

Age	Total	Percentage
<40 years	192	64
>40 years	108	36
<b>Socioeconomic status</b>		
Upper	4	1.4
Middle	152	50.6
Lower	144	48
Total	300	100



**Figure 1: Physical characteristics observed on the study subjects**



**Figure 2: Age wise distribution of study subjects according to type of exposure**

**Table 2: Distribution of study subjects according to associated activity**

Associated activity	Frequency	Percent
Just Standing	104	34.7
Walking	66	22.0
Driving	37	12.3
Standing in crowd	23	7.7
Sitting	20	6.7
Selling vegetables/fruits	12	4.0
With Tea	12	4.0
Others	13	4.0
Near Children	8	2.7
Talking over phone	5	1.7
Total	300	100

those who smoke publically and study there behavioral changes and physical changes consequent to smoking. One such step is observing closely to those who smoke on road. Smoking on road not only affects individual but it has adverse impact on children and on the plants also.<sup>5</sup> The psychosocial impacts on children is evident when someone smoke publically on roads, near malls, schools and hospitals. In addition to damage to personal health, smoking use results in severe societal costs like reduced productivity and health care burden, environmental damage and poverty of the families.

Interestingly if we compare the pattern of smoking age wise majority of the young adults (64%) of the study subjects were found to be smoking cigarette as compared to old adults (36%). And in those young adults 64% were found to be smoking cigarette and 36% were found to be smoking bidi. Similarly 33% of the old adults were found to be smoking cigarette and 67% were found to be smoking bidi (Table 2, Figure 2). It is worth mentioning that some of the subjects involved in occupations such as sweeping and vending were also found smoking cigarettes. It is logical to think that they want to mimic or imitate life style of the city gentry. However it costs them more money at the same time makes them more prone to various smoking induced health problems.

The fact that as many as 46% of these manifested smokers had central obesity putting them at risk of insulin resistance.<sup>6</sup> A significant number of young subjects had greying of hair with baldness. This is an ominous sign signifies risk for future Cardiovascular diseases.<sup>7</sup> Along with these signs central obesity was also present which is a very dangerous combination exposing them to cardiovascular diseases. Such individuals do harms to others in immediate vicinity (passive smok-

ing/second hand smoking/third hand smoking by leaving a trail of smoke damaging the DNA of people coming in contact with smoke clinging on surfaces or on closed spaces like lift, car, railings etc.<sup>8</sup>

Smoking while walking on road, crossing the main road or while driving is thought with increased risk of accidents<sup>9</sup> further smoking on road and talking over mobile poses remarkable risk for road safety.

Approximately 8% were found to be smoking and standing in crowd and near the busy markets where lots of young children were around. This sets bad example before school going children/adolescents/uninitiated young ones passing by road. Few were found to be smoking near their own kids standing or sitting next to kids exposing them to the second and sometimes third hand smoking. It is worth mentioning that smoking on road also adds to air pollution. Young people who work in offices particularly BPO workers tend to smoke and drink tea on road side tea stalls / tobacco shops thus putting themselves to dual threat of nicotine and caffeine.<sup>10</sup> Both combined together may compound more health damage. People who smoke while driving face net stress due to driving, environmental pollution, self-smoking, and reduced attention by use of mobile while driving makes them accident prone. The ill effects of smoking may take months to years to kill, but talking on mobile while driving may cause instant death by accident. There were few number of cases where people were found smoking in and around hospital and schools. Our study clearly reveals that the ban on public smoking has not been fully implemented in public places even near schools, hospitals and on main roads.

## RECOMMENDATIONS

Sale of tobacco should be banned.

Special drives should be carried out to increase the awareness regarding risks associated with smoking particularly near points where people tends to congregate or near schools, hospitals and public places.

Enforce zero tolerance for smoking near schools and hospitals.

## CONCLUSION

This study provides a window about the current status of smoking on road despite ban on smoking in public. It also informs us the other risk factors like central obesity & premature greying associated with smoking. The sample size is small. Other objective evidence like BMI, blood pressure, glycemic status, lipids, ECG and radiological evidence is lacking.

## ABBREVIATIONS

WHO: World Health Organisation

BPO: Business Process Outsourcing

## Highlights of Paper

- A significant number of young subjects had greying of hair with baldness. This is an ominous sign signifies risk for future Cardiovascular diseases.
- Smoking while walking on road, crossing the main road or while driving is thought with increased risk of accidents.
- Few were found to be smoking near their own kids standing or sitting next to kids exposing them to the second and sometimes third hand smoking.

## Author Profile



• **Dr Shridhar Dwivedi:** MD, FRCP, PhD, FAMS, FIACS, PG Dip Health Planning/Administration is Dean/Principal, & Professor of Medicine/Preventive Cardiology, HIMSR & Associated HAH-Centenary Hospital, Hamdard University, New Delhi. He has contributed immensely in the field of 'Preventive Cardiology', medicinal plants and life style diseases. Has published over 200 research papers and abstracts in national and international journals. His work on *Terminalia arjuna* and young CAD is a much cited work. He has been past President of Indian Society for Atherosclerosis Research and Indian Society of Hypertension. Recipient of several awards and orations.



• **Dr. Anika Sulania (MBBS, MD):** Working as a senior resident in department of community medicine, North DMC Medical College, Delhi. She has 2 nos. of journal paper; 7 nos. of abstract. Currently working in a project as research associate.

## REFERENCES

1. US Department of Health and Human Services. The health consequences of smoking: A report of the Surgeon General. Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office of Smoking and Health; 2004. Available from: [http://www.cdc.gov/tobacco/data\\_statistics/sgr/sgr\\_2004/00\\_pdfs/executive\\_summary.pdf](http://www.cdc.gov/tobacco/data_statistics/sgr/sgr_2004/00_pdfs/executive_summary.pdf), accessed on December 04 2014.
2. International Agency for Research on Cancer. Tobacco smoke and in voluntary smoking. In: IARC Monographs on the evaluation of the carcinogenic risk of chemicals to humans vol. 83. Lyon, France: IARC (WHO); 2004.
3. US Department of Health and Human Services. The health consequences of using smokeless tobacco. US Department of Health and Human Services, Public Health Services, National Institutes of Health. NIH Publication No.86-2874; 1986. Available from: [http://profiles.nlm.nih.gov/NN/B/B/F/C/\\_/Contents](http://profiles.nlm.nih.gov/NN/B/B/F/C/_/Contents). [http://profiles.nlm.nih.gov/NN/B/B/F/C/\\_/nnbbfc.pdf](http://profiles.nlm.nih.gov/NN/B/B/F/C/_/nnbbfc.pdf), (13.50 MB), accessed on December 06 2014.
4. Ezzati M, Lopez AD, Rodrigues A, Murray C. Comparative quantification of health risks: The global and regional burden of disease attributable to selected major risk factors. Geneva: WHO; 2004; 1: 929.
5. Dirk Selmar *et al.* Nicotine uptake by peppermint plants as a possible source of nicotine in plant-derived products. *Agronomy for Sustainable Development* 2015. 1-6.
6. Bajaj M. Nicotine and insulin resistance: when the smoke clears. *Diabetes* 2012 December; 61(12): 3078-80.
7. Dwivedi S, Aggarwal R. Nicotine and mobile mania: A new occupational threat to mankind. *Indian J Occup Environ Med.* 2012; 16(3): 149.
8. Rebekah Eliason. redOrbit.com – Your Universe Online. Accessed from <http://www.redorbit.com/news/health/1112880150/thirdhand-smoke-becomes-more-toxic-to-dna-over-time-062113/> accessed on 2.4.1015.
9. Mangiaracina G, Palumbo L. Smoking while driving and its consequences on road safety. *Ann Ig.* 2007 May-Jun; 19(3): 253-67.
10. Dwivedi S. IJMS Oration- Available on <http://ijms.in/ijms%203rd-conference-proceedings-2013/ijms-oration.pdf> 2013. Accessed on 4.3.2015.