

Study on Prevalence of Tobacco and Alcohol Consumption Habits, Health Impacts and Effect of Pictorial Health Warning on People in Indian Society

Shekhar Nayak

Department of Zoology S.D. College, Muzaffarnagar- 251001, India

Abstract: A regularly increasing trend of consumption of tobacco (chewing and smoking), alcohol and other intoxicants is noticed in Indian society which is resulted in to different ailments in youth and adults, posing health complication burden on health services as fatal diseases are being appeared as cancer, cardio-vascular diseases, oral diseases, respiratory, digestive, neuro-endocrine problems, hypertension, diabetes and other disorders. The present study revealed the behaviour of people in relation to tobacco and alcohol habits, health impacts and specially the psychological impact of pictorial health warning on people of Muzaffarnagar, India and adjacent regions. Views of people were collected and data after analysis revealed the various aspects regarding intoxication and impact of pictorial health warning on people. It was found that there is a feeble impact of these health warning photographs on people. The dual and trio trend of intoxicant addiction was observed. Tobacco and alcohol consumption was found as the major cause of disease and disorders in people. The data with a sample size of 1370 people having tobacco and alcohol consumption habits were collected from Oct. 2017 to April, 2018, views and effects of toxicants were analysed. The separate and joint categories of consumption of different tobacco and alcohol products assessed that 5.4% people in society as the adult individuals of age group 24-60+ yrs were found with only smoking habit. Analysed data determined that no any person was found with only chewing tobacco (SLT, smoke less tobacco) habit, 43.5% people were having dual tobacco consumption as smoking and tobacco chewing habit and found as dual consumers. 32.8% people were found with smoking, tobacco chewing and alcohol consuming habits. 11% people of age group approx. 20-30 years were found when they started smoking and tobacco chewing habit at the age of 12-14 years approx. Data regarding psychological impact of pictorial health warning, printed on tobacco packets determined that 92% people noticed the health warning pictures indicating different complications. The psychological impact of such health warning photographs was studied during the present study.

Keywords: cortisol, intoxication, carcinogen, aromatic

1. Introduction

The present study is carried out to find the hidden facts in reference to consumption of tobacco and alcohol in different segments of Indian society. Tobacco consumption habit in various forms as cigarette smoking, chewing tobacco etc. is an old practice in Indian society. People consume tobacco and its products and get affected adversely by its impact on their health. This study covered various aspects as age, gender, educational status and the factors which motivated people to start the tobacco consumption habit specially at their early age as adolescence age time. Tobacco causes one death every second yet India is the second leading consumer, of the more than 6 million tobacco related deaths every year across the world, one-sixth occur in India alone. The joint report of central health ministry, Govt. of India, Tata Institute of Social Science, Mumbai and World Health Organisation in the form of Global Adult Tobacco Survey, India-2 (2017) warned that the adverse effect of tobacco will cause 13% death in next two years. 28.6% population is using tobacco.

Akansha Singh and Laishram Ladusingh (2014) examined the regional variations, socioeconomic, demographic and other correlates of smoking, smokeless tobacco and dual use of in India. They analyzed a cross sectional, nationally representative sample of individuals from Global adult Tobacco Survey(2009-2010). Smokeless tobacco use was the major form of tobacco use in India followed by smoking

and dual tobacco use. Tobacco use was higher among males, the less educated, the poor and the rural population in India. Cigarette smoke and adverse health effects were studied after receiving the data from various countries and showed smoking prevalence and other tobacco use related data estimated that there are approximately 1.1 billion smokers worldwide of which 900 million are men and 200 million are women. Smoking prevalence in men and women averages 42% and 24% respectively for developed countries and 48% and 7% respectively for less developed countries (Sibu P. Saha *et.al.* 2007). Govino GA, Mirza SA *et.al.*(2012) compared prevalence data for patterns of adult tobacco use and factors influencing use are absent for many low- income and middle income countries and assessed these patterns through analysis of data from the Global Adult Tobacco Survey (GATS), and found in countries participating in GATS, 48.6% of men and 11.3% of women were tobacco users. 40.7% of men (ranging from 21.6% in Brazil to 60.2% in Russia and 5.0% of women (0.5% in Egypt to 24.4% in Poland) in GATS countries smoked tobacco product. Manufactured cigarettes were favoured by most smokers (82%) overall but smokeless tobacco and Bidis were commonly used in India and Bangladesh.

Zhanq J., Ou JX, and Bai CX (2011) revealed that about one-third of the world's tobacco is produced and consumed in China. Despite existing tobacco control policies and activities, the prevalence of smoking in china remains high with 350 million smokers and 740 million passive smokers. Furthermore, smoking rates in the young population and in

Volume 7 Issue 8, August 2018

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

females are increasing. The number of deaths attributed to tobacco use has reached 1.2 million per year whereas the death toll is expected to rise to 2 million annually by 2025. About 28.6% of the population consume tobacco and threshold prevalence of tobacco consumption in population found 51.3% for men and 10.35% for women aged 15 yrs and above in India (Priya Mohan *et.al.* 2018). Rani M and Bonu, *et.al.*(2003) estimated from National Family Health Survey-2 (1998-99) that thirty percent of the population 15 years or older - 47% men and 14% women - either smoked or chewed tobacco which translates to almost 195 million people - 154 million men and 41 million women in India. Tobacco consumption was significantly higher in poor, less educated, schedule castes and ST population. The prevalence of tobacco consumption increased up to the age of 50 years and then levelled or declined. Tobacco and alcohol use has been associated with rising incidents of tuberculosis, homicide, suicide, neuro-endocrine disorders, heart ailments, strokes, bronchitis, delayed healing the wounds, infertility, peptic, and oesophageal ulcers, oral disease diabetes, hypertension etc. Tobacco use is a global epidemic among young people. As with adults, it poses a serious health threat to youth and young adults in the United States and has significant implications for this nation's public and economic health in the future (Perry *et.al.* 1994; Kessler 1995).

One-half of adult smokers die prematurely from tobacco-related diseases (Fagerström 2002; Doll *et.al.* 2004). The first comprehensive Surgeon General's report on tobacco use by youth, preventing tobacco use among young people, was published in 1994 (USDHHS 1994). That report concluded that if young people can remain free of tobacco until 18 years of age, most will never start to smoke, long-term users to die prematurely (Fagerström 2002; Doll *et.al.* 2004).

Tobacco and alcohol consumption does not harm the individuals alone but also affects national economy through increased health care costs and decreased productivity. Zhanq H and Cai B.(2003) estimated that approx. 67% males & 4% females aged over 15 yrs in China are smokers. The continuous rapid increase in the number of Chinese smokers is largely due to teenagers taking up smoking. Among teenagers aged 15-19 yrs, 18% of men and 0.28% of women (making a total of a million teenagers) are smokers. The prevalence of passive smoking is very high at 53.5% , about 0.3 billion people aged above 15 yrs were affected. Over two-thirds of all death related to smoking in China are attributed to chronic obstructive pulmonary disease (COPD), lung cancer and pulmonary tuberculosis.

Palipadic K, Rizwan SA, *et.al.* (2012) used the Global Adult Tobacco Survey (GATS) data and estimated that the prevalence of different forms of tobacco use varies across countries. Current tobacco use ranged from 27.2% in Thailand to 43.3 in Bangladesh. Exclusive smoking was more in Indonesia (34.0%) , Thailand 23.4% less common in Bangladesh (16.1%) and India 8.7%. Exclusively using SLT was more common in Bangladesh (20.3%), India (20.6%), less common in Indonesia (0.9%) & Thailand (3.5%). Dual use of smoking and SLT was found in

Bangladesh 6.8% and India 5.3% but was negligible in Indonesia 0.8% and Thailand (0.4%).

Subramanian SV and Nandy *et.al.*(2004) assessed that individuals with no education are 2.69 times more likely to smoke and chew tobacco than those with Post Graduate Education.

SC & ST were more likely to consume tobacco than any other caste groups. For STs odd ratio 1.23, 95% confidence interval 1.18 to 1.29 for SCs (1.19, 1.16 to 1.23). The 2014 Surgeon General's report has found that smoking is a cause of type 2 diabetes, which is also known as adult onset diabetes. Smokers have a greater risk of developing type 2 diabetes than do non smokers. The risk of developing diabetes increases with a number of cigarettes smoked per day. Smoking increases inflammation in the body. Inflammation occurs when chemicals in cigarette smoke injure cell, causing swelling and interfering with proper cell function. Smoking also causing oxidative stress, a condition that occur as chemicals from cigarette smoke combination with O₂ in the body causing damage to cells. Both inflammation and oxidative stress may be related to an increased risk of diabetes. Smokers tend to have higher concentration of cortisol a hormone that increases blood sugar. Smokers have a 30% to 40% higher risk of diabetes than non-smokers. According to a report by ICMR, tobacco accounts for about 30% of all cancers in men and women in India. Mouth cancer is most common among men followed by lung cancer. Tobacco related cancer accounts for 42% of all male deaths due to cancer and 18.3% of all female deaths. Of the 4800 chemicals used on tobacco, 69 are known to cause cancer. Smoking tobacco releases CO which blends Hb in the blood more easily than O₂ does, thus reducing the amount of O₂ circulating in the body. The study also covered the effect of warning photograph and statutory warning printed on tobacco packets on people. The data with a sample size of 1370 people from Muzaffarnagar and adjacent region, India, with tobacco consumption habit were collected from October 2017 to April, 2018 and views and effect of toxicants were studied. As Govt. of India directed tobacco manufacturing companies to print the pictorial warning up to the 85% surface area on tobacco containing packages showing the adverse health effects and keeping this view in relation to study purpose, I started the work for this study to find out about the real thinking and views of people about warning photographs .What is the reality of smoking habits in students in our society and for this the study can unveil the ferocious facts in this regard. As earlier, data suggested that one million tobacco consumption deaths occur in India every year. Tobacco consumption kills half of its users with smoking and smokeless killing nearly six million people worldwide – one death every 6 seconds-each year. Study also covers the tobacco sellers view for warning photographs and its impact on sale of tobacco products. Information regarding health status of people, various health complications and amount of tobacco consumed were also collected from tobacco consumers. Sports and physical activity status were also considered. Other intoxication habits were also recorded. Tobacco is being consumed by people in different forms has approximately four thousand types of toxicants as studied its chemical composition .The smoke can be separated into gas and particulate phases. The

composition of the smoke delivered to the smoker depends on the composition of tobacco and how densely it is packed, the length of the column of tobacco, the characteristics of the filter and the paper and the temperature at which the tobacco is burned. Among the gaseous phase, components are carbon monoxide, carbon dioxide, nitrogen oxides, ammonia, volatile nitrosamines, hydrogen cyanide, volatile sulphur containing compounds, volatile hydrocarbons, alcohols, aldehydes and ketones. Some of these compounds inhibit ciliary movements in the lungs. Tar is the compound in tobacco that remains after the moisture and nicotine are subtracted and consists of polycyclic aromatic hydrocarbon which are carcinogens. Non-volatile nitrosamines and aromatic amines play an etiologic role in bladder cancer. The actual content of nicotine in tobacco can vary from 0.2 to 5%.

2. Materials and Methods

To find out some real facts, the significant and relevant questionnaire was designed along with observed health status of people. Gender, age, educational status, age at the time of starting tobacco consumption whether only smoking or dual nature of tobacco consumption accompanied with alcohol if being consumed and circumstances which inspired for tobacco consumption. Getting noticed about statutory and pictorial health warning and their effects on psychology of people along with health complications, their family history in relation to tobacco consumption and its caused health complications in family members, for how many years people have been consuming tobacco and alcohol, quantity of tobacco and alcohol being consumed per day, time of consumption, reason behind intoxication habit, consumption of intoxicant and its co-relation to health disorders, reason behind addiction and any other intoxication habit were included in present study. Physical activity and exercise status were also recorded. View and response of tobacco seller about warning health photograph towards tobacco consumers and effect of warning picture on tobacco sale were also considered during this study. Total individuals as adults youths teenagers and students were approached and information regarding tobacco consumption in the form of gutkha (processed tobacco pouch) and zarda chewing tobacco, smoking, and alcohol consumption were collected. Data were analyzed and results were calculated as the percentage of individuals of various groups. Information in connection of dry intoxication addiction was also collected.

3. Results and Discussion

During the study the respondents were categorised into adult smokers (cigarette and bidi, tobacco wrapped in leaf), tobacco consumers (smokeless tobacco, SLT) and alcohol consumers, the separate and joint categories of consumption of different tobacco and alcohol product were analysed and it was found that the adult individuals as age group 24 - 60+ had only smoking habits with 5.4%, no individuals consuming chewing tobacco only were found while these same individuals were found with dual or trio consuming habits whether smoking and tobacco chewing, smoking and alcohol, tobacco chewing and alcohol, smoking with tobacco chewing and alcohol. Alcohol consumers only were also

found during the study in great percentage. Total tobacco use was overall 34.6%, varying for males (47.9%) and females (20.7%). The rural areas of country exhibit comparatively higher prevalence rates (38.4%) in comparison to urban areas (20.5%) Gupta Bhawna (2013). Analysed data revealed that 43.5% people were dual tobacco consumers having smoking and tobacco chewing habit as dual consumers. 32.84% people were found with smoking, tobacco chewing and alcohol consuming habits. Only alcohol consumers were found with 84.08%. People with smoking and alcohol consuming habit were found in 61.75%. Collected and analysed data also revealed that 47.29% people were engaged in alcohol and chewing tobacco consuming habit. So, several categories of people were found in Indian society having diverse intoxication habits. The present study covered various areas as habit, behaviour and impact of tobacco and other intoxication in people. After analysing the collected data it was found that 34% people of age 20 -30 years started alcohol consumption at the age of 17 or 18 years while 66% people started alcohol consumption at the age of 21-22 years. Data collected regarding consumption habit of alcohol as 22.4% people consume alcohol occasionally, 21.6% people consume alcohol 15-20 days in a month, approx. 33.6% people consume alcohol 2-3 days in a week and approx. 22.6% people admitted that they consume alcohol 4-6 times in a month. Studied data in relation to 30- 60 years of age group people suggested that 47.9% people started alcohol consumption at the age of approx. 30 years, 9.06% started alcohol consumption at the age of 26-27 years. Approx. 66.85% people started this habit at the age of 22-23 years and approx. 6.14% people were found with consuming alcohol since age of 17- 18 years. 21.05% people in this age group were found with no alcohol consumption habit. In case of age group 30-65, the age when people started the habit of tobacco consumption was noted and analysed data assessed that 22.22% people started chewing gutka (tobacco pouch) consumption at the age of less than 20 years. 70.37% people started this habit at the age of 21-30, mostly they started at the age of 24-25 years. 7.4% people started chewing tobacco consumption at the age more than 30 years.

11% person of age group approx. 20-30 years were found while they started smoking and chewing tobacco at the age of 12-14 years of age approx. 22% people started this habit at the age of 17-18 years. Approx. 56% people started smoking at the age of 21-22 years. 11.1% people are not using tobacco they had quit the habit. Approximately 89% people started the smoking habit getting inspired from their friends and 11% people started smoking habit after getting inspired from their father and relatives who smoked.

Approximately 72% people said that they have noticed (not read) the statutory warning written on cigarette and tobacco packets, 28% people said that they did not notice it. Approx. 76% people have read the statutory warning and 24% did not want to react the warning lines about health complications and views. Data regarding impact of health warning photographs were collected from people which is one of the major things or points of this study and revealed that 92% people have noticed and seen the pictorial health warning, indicating different health complications as oral cancer, lungs cancer etc. printed on cigarette and other tobacco

products. Here 8% people did not notice or observe this warning photographs. It also important to know that during the investigation regarding psychological impact of pictorial warning indicating various health disorders due to toxin contained in cigarette and chewing tobacco and other tobacco products that approx. 16% people wished to ignore or not to see the health warning photograph and after getting it noticed they just wanted to keep away from their sight to these warning photographs. They used to purchase the loose cigarette instead the purchase of packets. People also told that they keep the packets as in hidden position of health warning photographs and wanted to keep the cigarette packet as the photograph surface not being seen to smokers as in inverted and concealed the health warning surface. Such cigarette smokers told that they do not want to see the warning photographs. Another important aspect of study was about the psychological impact on habit of tobacco consumption as smoking etc. that after getting noticed to warning health photograph, 48% people said that the smoking and tobacco consumption habit can harm to them and 52% people have found with no effect of health warning photographs. They use cigarette and tobacco regularly without its fear. Study indicates that whether they noticed the warning photographs or not but they are using regularly the cigarette and tobacco.

The most important aspect of present study was analysed and it was determined that approx. 29.72% people of various

age groups had felt fear due to health warning photographs and 62.16% people were found without fear or had no fear due to health warning photographs. Approx. 8.1% people had no clear view regarding this aspect.

People were asked that at the time of tobacco purchase tobacco seller had ever discussed or told about the warning health pictures with people and in this aspect it was found that 88.46% people said that the tobacco seller had never discussed about health warning pictures with them, 11.53% people said that the tobacco seller discussed about warning health and photographs.

People told that the tobacco seller never refused to give tobacco products to the smoker, chewing tobacco consumers. Data regarding health complications due to tobacco consuming habit and it was found that approx. 88% people were found suffering from cough, respiratory disease, etc. and about 12% people were found suffering from upper respiratory tract disease, asthma, bronchitis etc. Data regarding health complication in family members were collected and it was founded that 84% people said that there is no any member of family who was suffering from any complication due to the tobacco consuming habit. About 16% people said about the occurrence health complication in their family members.



Pictorial health warning on different tobacco packets

Information about the decisions to quit smoking and tobacco chewing habit after noticing health warning photographs, approx. 9.3% people answered positively and they had quit tobacco consumption habit.

Approx. 75% people had no effect and they did not quit the tobacco consuming habit as cigarette smoking and tobacco chewing. 15.6% people had admitted that they had reduced the tobacco consumption.

The people consuming tobacco 'gutka' (tobacco pouch) were found with cheek and teeth problems with a percentage of 52. People had admitted and found with oral problems who were consuming gutka, chewing tobacco and zarda, the processed tobacco extract. Chewing tobacco caused cheek pain, irritation by chillies, salt and spices in oral cavity, had allergy and color of internal surface of cheeks, mucus membrane found as leukoplakia in some cases. The color of teeth was found red and teeth decay problems was noticed in such people at great level.

Approx. 16% people were found having oral problems, who had smoking habit. Some surprising result were found during the present study as about 96% people did not discuss with tobacco seller regarding printed health warning pictures and 4% people were found who discussed in this reference.

Data collected and analysed about the impact of health warning pictures printed on tobacco packets cigarette and chewing tobacco packets on sale of cigarette and tobacco products, 96% tobacco seller admitted that sale of cigarette and chewing tobacco remained normal and there was no any negative effect on sale of tobacco products. It was surprising to know that 4% seller said that the sale of tobacco products has increased.

Data regarding number of cigarettes smoked and quantity of chewing tobacco used by the people were also collected and analysed and it was determined and assessed that 31.25% people were found as heavy smokers, smoked 10 cigarette or more per day and 65.6% people were found moderate smoker, smoked 2- 4 cigarette per day. About 33.33%

people were found consuming 100gm or more chewing tobacco per day and 66.67% people were found moderate chewing tobacco consumer, consuming approx. 50gm tobacco per day. Data regarding smoking and tobacco consumption time, it was found the people consume or smoke at any time as morning, noon, evening or even night. No specific time was found in this reference.

75% people smoke for consume tobacco to get some relax. 25% people suppose that they have no specific reason for tobacco consuming habit.

It was found and assessed after analysing the collected data and information from people that they had a correlation of tobacco consuming habit and disorder in the body due to the impact of tobacco. 45.7% people were found suffering from the disorders, health complications like hypertension, high bad cholesterol, diabetes and anxiety due to smoking and tobacco consumption. 11.42% people were found suffering from hypertension. 28.57% people did not get any health check up and 14.28% people were found with no any disorder and complication. So it was assessed and concluded on the basis of observed data that the tobacco consumption in any form as smoking, chewing tobacco is correlated to health complication and these tobacco products cause various disease in people. One of the significant aspects of study as habit of physical activities, physical exercise and sports activities in people were also considered and it was found that 37.5% people had no physical activity habit as walking, running or gym activities. 30% people had the morning walk habit while 12.5% people were found who were remained with gym activities. Here 20% people were remained engaged in gym and walking physical activity. In relation to present study that people who found involved in physical activities but could not prevent themselves from bad impact of tobacco. People were found with different health complications in spite they remained involved in physical activities and it can be concluded that tobacco causes the similar negative health impacts on both the groups of people as with and without physical activities. People who engaged in physical activities with smoking and tobacco chewing habit were found as approx. 66% affected from oral, gums and teeth problems. It clearly indicated the adverse effect of tobacco on health in spite they were engaged in physical activities, exercise, walking, running etc.

Students with age between 18-23 (approx) who were studying in various degree programmes as technical, management and other streams were also found involved in smoking, chewing tobacco and other intoxication habits. The students near the educational institutions and at other places were found smoking and at that time they were interviewed to know about the tobacco consumption habit. 88% students were found as cigarette smokers and 12% were found with dual habit of tobacco consumption as cigarette smokers and chewing tobacco consumers and with alcohol consumption.

All interviewers accepted that they have no fear of pictorial health warning while consuming tobacco whether in the form of cigarette or chewing tobacco. The students did not notice the health warning photograph printed on cigarette packets and other tobacco products. They consumed 1-2 cigarettes daily. 65% graduation students of 1st and 2nd years

accepted that they have the smoking habit from last six months to two years and 35% students were having cigarette smoking habit for last 2-3 years with alcohol consumption occasionally. Out of these students, 10%-20% were found heavy smokers consuming 1-2 packets of cigarette per day.

It was surprised to know that the girl students were also found engaged in cigarette smoking habit with a percentage of 10-15.

Students were engaged with cigarette smoking habit and some students were also found using other intoxicants as marijuana, *Cannabis sativa* leaves and flower blends or extract of plant, blending with cigarette tobacco. Consumption of *Cannabis* is to get a psychoactive and mind altering effects.

This intoxication trend is increasing in youth in society whether they are students or not.

This was found equally in students in cities and youths as adolescences in rural areas and this trend is increasing regularly. The labour class people were also found engaged in consuming these intoxicants.

Approx. 20% students and youth were found engaged in such intoxication habits. But this can be controlled by:-

- a) Reducing tobacco supply.
- b) Increasing tobacco taxation.
- c) Increasing education.
- d) Prohibiting tobacco advertising.
- e) Smoking cease support.
- f) Counselling cell should be set up in schools and colleges to tell the students about the hazards of tobacco consumption.
- g) Penalty for smoking openly at public places.
- h) Shopkeepers should be directed not to sell tobacco products to minors and students. In case they don't follow the directions, a high penalty should be imposed on such shopkeepers and licence be cancelled.
- i) Videos showing health problems should be displayed at tobacco shops.

References

- [1] Doll R, Peto R, Boreham J, Sutherland I (2004) Mortality in relation to smoking: 50 years' observations on male British doctors. *BMJ (British Medical Journal)*;32:1519. Fagerström K. (2002) The epidemiology of smoking: health consequences and benefits of cessation. *Drugs*;62(Suppl 2):19. [PubMed] Giovino GA, Mirza SA, Samet JM, Gupta PC, Jarvis MJ, Bhala N, Peto R, Zatonski W, Hsia J, Morton J, Palipudi KM, Asma S; GATS Collaborative Group (2012) Tobacco use in 3 billion individuals from 16 countries: an analysis of nationally representative cross-sectional household surveys. *Asian Pac J Cancer Prev.Lancet*. 2012 Aug 18;380(9842):668-79.
- [2] Gupta Bhawna (2013) Burden of smoked and smokeless tobacco consumption in India – Results from Global Adult Tobacco Survey India 2009-10. *Asian Pacific J. Cancer Prev.*, 14 (5), 3323- 3329.

- [3] Kessler DA (1995) Nicotine addiction in young people. *New England Journal of Medicine*;333(3):186–9. [PubMed]
- [4] Perry CL, Eriksen M, Giovino G. (1994) Tobacco use: a paediatric epidemic *Tobacco Control*;3(2):97–8
- [5] Palipandic KM, Gupta PC *et.al* (2012) social determinants of health and tobacco use in thirteen low and middle income counties: evidence from Global Adult Tobacco Survey. *PLOS One* 2012 ; 7(3): e 33466. Doi: 10137.
- [6] Priya M *et.al.*(2018) Assessment of Tobacco Consumption and Control in India. *Indian J. of Clinical Medicine* vol. 9: 1-8.
- [7] 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. [PubMed].
- [8] Singh A, Ladusingh L (2014) Prevalence and determinants of tobacco use in India: evidence from recent Global Adult Tobacco Survey data. *PLoS One*. ;9(12):e114073.
- [9] Subramanian SV, Nandy S, Kelly M, Gordon D, Davey Smith G (2004) Patterns and distribution of tobacco consumption in India: cross sectional multilevel evidence from the 1998–99 National Family Health Survey. *BMJ* 328(7443):801–806. [PubMed].
- [10] Siby P Saha *et.al.* (2007) Cigarette smoke and adverse health effects : An overview of research trends and future needs. *Int. J. Angiol. Autumn*;16(3):77-83.
- [11] Zhanq H and Cai B (2003) the impact of tobacco on lung health in China. *Respirology*; 8 (1) : 17-21.
- [12] Zhanq J, Ou JX, Bai CX (2011) Tobacco Smoking in China : prevalence disease burden, challenges and future strategies. *Respirology* 2011 Nov; 16(8) : 1165-72.