CHAPTER - 1

GENERAL INTRODUCTION

Tobacco appears to be as old as human civilization. Cultivation of the tobacco plant probably dates back 8000 years when two species of the plant, *Nicotiana rustica* and *Nicotiana tabacum*, were dispersed by American Indians through the southern and northern American continent (Luthra et al., 1992). Tobacco seeds were discovered in archaeological excavations in Mexico and Peru, and the remains of permanent settlements build around 3500 BC showed that tobacco was an important article to the inhabitants (Luthra et al., 1992). Tobacco belongs to the family of plants called solanaceae or the night shade family and the genus *Nicotiana*.

Tobacco was introduced into India by Portuguese traders during AD 1600. Its use and production proliferated to such a great extent that today India is the second largest producer of the tobacco in the world. Soon after its introduction, it became a valuable commodity of barter trade in India. Trade expanded and tobacco spread rapidly along the Portuguese trade routes in the East, via Africa to India, Malaysia, Japan and China. During this period, the habit of smoking spread across several South Asian countries (Sanghvi, 1992).

Initially, the British traders imported American tobacco into India to finance the purchase of Indian commodities. When the American colonies declared independence in 1776, the British East India Company began growing tobacco in India as a cash crop. The British East India Company and its successor, the British Raj, used tobacco as an important cash crop, both for domestic consumption and foreign trade. The
manufacturing industry was, however, not established till much later, as the British believed in exporting the leaf to Britain and re-importing cigarettes to India, with considerable value addition in the process. As domestic consumption of cigarettes rose, the Imperial Tobacco Company commenced production within India, retaining control and repatriating the profile (Wild, 1999; Technology Information, Forecasting and Assessment Council, 2004).

In the late nineteenth century, the beedi industry began to grow in India. The oldest beedi manufacturing firm was established around 1887 and by 1930 the beedi industry has spread across the country. The price differential from cigarettes favoured the use beedis by the working classes and this domestic product soon supplemented cigarettes as the major form of tobacco consumption. The tax policies adopted by the Indian Government after Independence also favoured the use beedis in comparison to cigarettes. This further fostered a growth in beedi consumption (Indian Central Tobacco Committee, 1960; Directorate of Tobacco Development, 1997; Kori, 1998; Tobacco Board, 2002).

The economics of tobacco, which introduced it into India and entrenched it during the colonial rule, also provided a compelling reason for continued state of patronage to the tobacco trade, even in free India. The ready revenues that bolster the annual budgets, the ability to export to a tobacco hungry world market and the employment opportunities offered to millions provided the rationale for encouraging tobacco, both as a crop and as an industry (Sanghvi, 1992).

While economics may have been the principal force propelling the seemingly inexorable advance of tobacco in India, there are also a multitude of social and cultural factors which need to be recognized, so that the variations in its use across social,
religious and ethnic subgroups can be comprehended. Such factors have operated since the time tobacco entered India, though the nature of the socio cultural determinants that influence individual and community responses to tobacco may have varied over time, region, religious denomination and social class.

Tobacco occupies a prime place in the Indian economy on account of it considerable contribution to the agricultural, industrial and export sectors. India is the second largest producer of tobacco in the world. China and the USA rank first and third, respectively, in terms of tobacco cultivation. Brazil, Turkey, Zimbabwe, Malawi, Italy and Greece are the other major tobacco producing countries. Tobacco contributes substantially to the economies of these countries. In 2000-2001, the contribution of tobacco to the Indian economy was to be the extend of Rs. 81,820 million, which accounted for about 12% of the total excise collections. Foreign exchange earnings during the same period were Rs. 9030 million, accounting for 4% of India’s total agricultural export (Centre for Monitoring Indian Economy, 2004).

Andra Pradesh, Gujarat, Karnataka, Maharastra, Bihar and Tamil Nadu are the major tobacco producing states in India. Around 65% of India’s production comes from Andhra Pradesh (34%), Gujarat (22%) and Karnataka (11%). Tobacco is also grown in Orissa, Uttar Pradesh and West Bengal. Andhra Pradesh, Gujarat, Karnataka and Uttar Pradesh together account for over 90% of total tobacco production in the country. Currently, Indian tobacco is exported to more than 80 countries spread over all the continents.

India has a large, highly integrated tobacco industry, which involves the cultivation of several varieties of tobacco, the manufacture of different tobacco products, including unprocessed and chewing tobacco, and an extensive distribution
and retail system. Over the years, a combination of strong prices, domestic consumption, good export demand for tobacco and low prices of other crops helped the growth of tobacco from a cash crop to a manufacturing industry linked with commercial considerations. The tobacco industry in India includes the production, distribution and consumption of (i) leaf tobacco, (ii) Smoking products such as cigarettes and beedis and (iii) various chewing tobacco products. The organized sector of the industry, dominated by multinational corporations, is at the forefront of canvassing support for the sector. The unorganized sector too exploits its emotive appeal as a mass employer of the poor, especially rural women.

The immediate and tangible benefits that accrue from tobacco cultivation, manufacture and marketing act as incentives for farmers to grow tobacco and for the government to encourage tobacco cultivation and manufacture. Tobacco has developed from a commodity to which great importance and value were attached and hence used for barter trade during the sixteenth and seventeenth centuries, to a cash crop in subsequent periods.

Tobacco has developed as a cash crop because

(1) Tobacco has been contributing substantially to the total agricultural income.

(2) It yields high net returns per unit of cultivation as compared to other crops.

(3) It provides employment opportunities, both in agriculture and activities involved in the manufacture of tobacco products.

(4) It is a major foreign exchange earner.
It is an important source of revenue, which can be tapped relatively more easily than many other commodities. In view of its special qualities, a levy on it does not cause marked substitution effects and what the noted fiscal expert, Richard Musgrave terms ‘the spite effects’ (Musgrave, 1959). Therefore, practically every fiscal budget in India, the finance minister proposes raising a levy on tobacco products and justifies it on the ground that tobacco consumption is injurious to health.

There is considerable domestic and international demand for tobacco and its products.

Although tobacco was grown in many part of India during 1950s, the best quality crop was grown in Bihar, West Bengal, Tamil Nadu, Karnataka, Maharashtra, Punjab and Andhra Pradesh (Mazumdar et al., 1965). The area under tobacco cultivation increased within the first 20 years of Independence. India’s share in the world tobacco production was 10.2% in 2000, while that of China was 36.7%. However, in terms of productivity, India has always remained much below the world average by 20%-40%. An analysis of variety wise tobacco production reveals that the bulk of total tobacco production in India consists of non-cigarette tobacco products production of cigarette tobacco, mainly Flue Cured Virginia (FCV), though increasing, still accounts for only 30% of the total production in the country. This is because of the 200 million tobacco consumers in India, only 13% consume in the form of beedi and the rest in raw gutka forms (Indian Institute of Foreign Trade, 2002). Worldwide, 85% of the tobacco cultivated is used in the production of cigarettes. Hence, the tobacco consumption pattern in India markedly differs from the rest of the world in terms of
product configuration (Directorate of Tobacco Development, 1997; Tobacco Board, 2002).

India is the only country where the bulk of production consists of numerous non-smoking types of tobacco. Currently, India produces 600 million Kg (dry weight) of tobacco on an average. It is mainly cultivated in Andhra Pradesh and Karnataka, whereas beedi tobacco is grown in Gujarat. Beedi tobacco occupies 30%-35% of the total area under tobacco cultivation and is grown in Gujarat, Karnataka and Maharashtra. Nearly 85% of the world’s beedi tobacco is grown in India. The average yield varies between 1000 and 1700 kg / hectare in Karnataka and Gujarat, respectively. Recently, India became one of the largest producers of unmanufactured tobacco, ranking third after China and USA (Foreign Agricultural Service). China produces 39.2% of the total world production, while India’s share of unmanufactured tobacco production is 10.5%. During 2002-2003, the world production of unmanufactured tobacco was 6,024,000 tons of which India Produced 592,000 tones.

Manufactured tobacco is typically used for smoking such as in cigarettes and beedis, and in some varieties of chewing tobacco. Beedi is the dominant form of tobacco produced in Indian manufacturing units. Beedis alone accounts for 31% of all manufactured tobacco production while the share of cigarettes, cigars, cheroots and cigarette tobacco was 33% in 1997-1998 (Annual Survey of Industries, 1997-98).

The structure of employment in the Indian tobacco industry largely reflects the structure of the consumer market for tobacco products in India. Specifically, the effects of the production of beedis dominates employment opportunities within the manufacturing sector of the domestic industry as this is a highly labour intensive
activity and involves much less sophisticated manufacturing techniques compared to those employed by cigarette manufacturers.

The beedi industry in India is labour intensive. Since beedi rolling is largely considered to be a cottage industry, it generates much more employment at the manufacturing stage. It is estimated from the Annual Survey of Industries (1997-1998) data that almost 85% of employees of tobacco manufacturing industries are employed in the beedi industry.

The tobacco industry in India is subject to a range of taxes imposed by the central and state Government. The union Government raises revenue from the sales of all types of tobacco products predominantly through the imposition of excise duty calculated on an ex-factory basis. A recent study of Indian tobacco industry reported that traditional tobacco products, such as beedis, chewing tobacco and smokeless tobacco, account for 81% of the national consumer market and yet they comprise only 12% of the total tobacco excise collected from tobacco products (Indira Gandhi Institute of Development Research, 2002).

Beedi manufactures are mostly located in the states of Maharashtra, Madhya Pradesh, Gujarat, Andra Pradesh, Tamil Nadu, Kerala, Orissa, Karnataka and West Bengal; 4.5 million beedi workers most are women and an estimated 225 thousand or more children (8.4% of the work force) who roll beedis at home to earn an important share of income for their families (Gupta and Asma, 2008).

Those working in tobacco harvesting have symptoms of nicotine toxicity. Beedi making is mostly conducted in homes. When stored in the house, food spoils quicker and family members experience nausea and headache from the tobacco smell. They are constantly exposed to tobacco dust and used to sit for long hours, these workers
typically experience health problems like respiratory irritation, back and neck pain, arthritis and gynecological problems. Beedi rollers also experience headaches, nausea, giddiness, burning of the eyes and lacrimation. Tuberculosis, asthma are major disease and causes of death among beedi workers.

Female beedi rollers also report verbal and physical abuse based on gender and caste differences. Most beedi rollers cannot work beyond 45 years of age because of thickening skin on the fingertips, after which they forced to beg (Gupta and Asma, 2008). There are also many occupational hazards faced by those working in the tobacco fields, including health hazards such as green tobacco sickness, pesticide exposure and nicotine poisoning and while tobacco farming is not unique in its use of child labour, the particular hazards posed by tobacco cultivation places these children at increased risk of injury and illness (Efroymson, 2002).

The production of beedis (Small, inexpensive, hand- rolled cigarettes made from cheap tobacco and rolled in tendu leaf, commonly smoked in India) involves intensive labour; growing tobacco, plucking, collecting tendu leaves and rolling and packaging the beedis. While no accurate statistics are available, the Central Tobacco Research Institute (CTRI) has estimated that in India more than 6 million farmers and 20 million farm laborers are engaged in tobacco farming, spread across 15 states. Beedi rolling provides employment to an estimated 4.4 million people are engaged in the wholesale and retail sale of tobacco (Gupta, 2008).

Beedis harm not only those who smoke them, everyone connected with beedi manufacturing faces various health and occupational hazards. Beedis are mostly rolled at home where rollers expose their entire family (including newborns and Children) to harmful tobacco dust and fumes. Most beedi workers suffer from chronic respiratory
problems, skin problems, green tobacco sickness, asthma, tuberculosis, eye ailments and chronic backache. Beedi workers are largely illiterate and live below the poverty line, struggling each day to earn enough to feed their families two meals. Most of the workers are women and children, already vulnerable and exploited groups, with no access to educational or other career opportunities. Deprived of a normal childhood, it is not only their size which is typically stunted; these children become the core of a repetitive cycle of systemic poverty (Voluntary Health Association of India, 2008).

Beedi rollers handle tobacco flakes while inhaling tobacco dust and volatile components in their work environment. Diseases such as tuberculosis are more easily transmitted when ventilation is poor and many beedi workers work inside slimy households with open hearths, exposed to tobacco dust as well as other indoor air pollutants. They often complain of loss of appetite, due to monotony as well as the smell of the raw materials (Gupta, 2008).

Previous studies have provided evidence of the various health hazards faced by beedi workers. For example the absorption of nicotine induces oxidative stress among beedi workers; chronic nasal inhalation of tobacco dust and cutaneous absorption of tobacco alkaloids such as nicotine increases risk of cancer, lung diseases, and other health-related problems (Bhonsle et al., 1976). Other studies have revealed that tobacco dust exposure induces DNA mutation and damage (Swami, 2006).

Another study conducted by Govekar and Bhisey (1992) explained that beedi rollers handle 225-450g of beedi tobacco per day, all the while inhaling tobacco dust and volatile components present in the work environment. Since tobacco is known to be mutagenic and carcinogenic, urinary cotinine was measured in beedi roller and control subjects as an index of tobacco specific exposure while the concentration of
urinary thioethers was determined to ascertain exposure to electrophillic moieties. Detection of cotinine in urine samples from beedi rollers with no tobacco habits indicated that occupational exposure lead by cutaneous absorption of tobacco constituents and the resultant increase in exposure to alkylating agent was evident from elevated urinary thioether levels.

A study by Chattopadhyay et al., (2006) assessed respiratory impairments among informal male beedi workers and aimed to evaluate the pulmonary functional status of these workers and detect any pulmonary function impairments. It found that constant exposure to tobacco dust led to cough, breathlessness, morning cough, and chest tightness. These symptoms were found to exist at a higher level in exposed beedi workers compared to control subjects. A trend of decreased lung volumes correlated with age increment and duration work exposure.

Rao (1992) explained that plight of women beedi workers and provided some suggested solutions. In the single state of Madhya Pradesh, it was estimated that there were 6 to 10 lakhs beedi workers, 80% of them women. The constant exposure to tobacco made them fall easy victims to bronchial and chest diseases. Tuberculosis was common among the workers and their children. Children’s health problems were usually attended to, but the women neglected themselves. Results from a health survey among women beedi workers conducted in Jabalpur, Madhya Pradesh revealed that several occupation-specific health problems were widespread, like backache and joint pains, giddiness and head aches, eye problems, like watering burning and poor vision. These problems were genuine but, by and large unnoticed and unattended. About 50 to 70% of the women reported having gynecological and other health problems.
Gopal (2000) highlights issues of occupational health of women workers within the home based beedi industry through a case study from a block of the Tenkasi Taluk of Tirunelveli district. The data presented was from an unpublished thesis of a survey of 23% home based women beedi workers. There were nearly 5.5 lakhs workers in the beedi industry in Tirunelveli. The women worked without rest or leisure had poor food habits, little exercise, and health problems which worsened when pregnant. The fear of the exploitative employers was always present, adding to their worries and tensions. The present study may enlighten about the impact of handling tobacco during beedi rolling on the health status of a selected beedi worker population in Melapalayam, Tirunelveli District.

OBJECTIVES

- To study the socio-economic status of the beedi rollers.
- To study the common occupational health problem among beedi rollers.
- To compare the haematological parameters with special emphasis with lipid profiles of beedi rollers and non beedi rollers.
- To compare the haematological parameters with special emphasis with lipid profile of beedi rollers smokers and non-smokers.