OCCUPATIONAL HEALTH HAZARDS IN WOMEN BEEDI-ROLLERS OF ADILABAD AND NIZAMABAD DISTRICTS.

[1]M. Chandra kumar, [2]Dr. K Ramaneswari

[1]Asst.Professor, [2]Asst.Professor,
[1]Dept. of Zoology,
[1]Governement Degree College, Metpally, Jagitial, Telangana, India

Abstract : A comparison research was conducted between Occupational Beedi rollers and a Control group, with the goal of determining the negative consequences of tobacco exposure in beedi rollers in Northern Telangana. Beedi rollers and a control group were questioned in a 2:1 ratio, and data was obtained using a questionnaire. CBP, Total RBC, WBC count, Platelet counts, Differential Leukocyte count and Hemoglobin estimation, ESR, SGPT were among the biochemical tests performed. When compared to the Control group, SGPT and ESR levels were marginally higher.

Key words: Beedi rollers, Occupational health hazards, ESR, SGPT.

I. INTRODUCTION

Beedi is a South Asian cigarette composed of 0.2-0.3gm tobacco flakes wrapped with tendu leaf (*Diospyros melanoxylon*) and tied with a colour thread at one or both ends. Because it is a low-cost tobacco, it is immensely popular. It poses a larger health risk than traditional cigarettes since it emits more nicotine, carbon monoxide, and tar. Nicotine, Hydrogen cyanide, formaldehyde, lead, arsenic, ammonia, benzene, carbon monoxide, nitrosamines, and polycyclic aromatic hydrocarbons are only a few of the carcinogenic substances found in tobacco smoke. Many of these chemicals are linked to cancer, as well as heart disease, lung illness, and other major health issues.

The Beedi Industry is an unorganised sector in rural areas and impoverished areas in urban areas that plays a significant role in providing jobs to a large number of low-income women. Beedi rolling employs an estimated 1 million people in Northern Telangana, the majority of whom are women. Beedi is a centuries-old industry that ranks high among Telangana's small-scale industries. A major portion of this sector is unregulated and home-based, with contractors supplying raw materials such as tendu leaves, tobacco flakes, colour thread, and so on to Beedi rollers, who then provide the finished products (i.e., prepared Beedi bundles) to the contractor on time. Workers roll 500 to 1000 Beedis every day on average, using 225-450gm of tobacco flakes. Using scissors and a metal stencil guide, workers cut tendu leaves by hand. It is then filled with tobacco flakes and fastened with coloured thread after cutting. The process releases large amounts of fine/coarse tobacco dust particles into the work environment, which is typically the home, and for women working at home in small spaces with little ventilation, the tobacco dust remains in the house, where the women and her family eat, sleep, and spend much of their time, posing greater health risks. Asthma, tuberculosis, back strain, spondylitis, anaemia, swelling in the lower limbs, and digestive issues are the most prevalent disorders.

According to Srinivasulu (1997), women make about 90% of the Beedi workforce. When they keep Beedis in the house, the foodstuff spoils more quickly, and the family is nauseated and has headaches. (Panchamukhi, PR 2000). Rollers do not wear protective equipment such as gloves or masks, exposing

themselves to nicotine through their epidermis and breathing the harmful particles. As per Bagwe and Bhisey (1991) and Swamy et al., beedi rollers are exposed to unburnt tobacco via epidermal and nasal mucosa channels (1995).

Respiratory ailments, skin infections, gastro intestinal illness, gynaecological issues, lumbosacral pain, and susceptibility to fungal diseases, peptic ulcers, haemorrhoids, and diarrhoea impact the beedi rollere, according to Ranjith singh and Padmalatha (1995).

Finger numbness, breathlessness, and stomach ache, including cramps and gas, have also been recorded in Beedi rollers (Dikshit and Kanhere 2000; Rajasekhar and Muley 2001; Das and Pandey 2000; Kuruvila et al 2002).

According to Mittal et al.2008, the most common illnesses in women beedi rollers are postural difficulties, eye problems, and a burning sensation in the throat. Inhalable tobacco dust in tobacco factories was linked to chronic bronchitis among workers, according to Bhisey et al. (2006).

Indulgence of the hands and pregnancy complications in women Beedi rollers were reported by Ratna.R and Kaur.S (1999); Aghi and Gopal (2001).

Bagwe et al. (1992); Bhisey and Bagwe (1995); Mahimkar and Bhisey (1995); and Umadevi et al. (2003) investigated the cytogenetic toxicity of tobacco exposure in the workplace. Although women Beedi rollers have been reported to have a number of occupational health problems, there is little evidence on the effect of tobacco dust on numerous blood parameters.

II. Methodology:

As a result, this study was carried out with the goal of gathering information on the health problems that Beedi rollers face, with a focus on haematological studies, as well as raising awareness among the rollers about diseases that may result from indirect tobacco consumption and exposure to tobacco dust.

The research was carried out in the Northern Telangana districts of Nizamabad and Adilabad. The interviewed experimental group included 126 (female beedi rollers) who did not smoke or chew tobacco and only had occupational contact to tobacco flakes. An interviewed control group of 60 women with no work exposure to tobacco dust and no tobacco chewing or smoking habits was chosen from the general female community. Out of which 60 members from experimental group and 30 from control group gave willingness to give blood sample for the study.

Each Beedi roller and control group member's houses and Karkhana (work location of Beedi roller) were visited to obtain relevant information. Their personal information, age, family data, monthly income, educational qualification, work experience as a Beedi roller, smoking habits, use of tobacco for chewing or brushing teeth, and numerous health concerns they have had are all listed here.

Beedi rollers with a minimum work experience of 15 years and an average exposure of 8 hours per day as a roller were chosen as the experimental group after the ladies were interviewed.

Blood samples were taken from them for complete blood picture analysis and haemoglobin assessment. ESR, SGPT were the metrics chosen. The control group members were subjected to the same tests as the experimental group members.

III. Results and Findings

The bulk of responses are between the ages of 30 and 50, according to the analysis.

Many of the beedi rollers tested positive for anaemia during clinical evaluation

Table: 1

General information of Controls and Beedi rollers:

S.No	Parameter	No. of respondent %	
		Control group	**Sample group (Beedi roller)**
1	**Age**	N=60	N = 126
	20-30	Nil	08 (6.55%)
	30-40	36(60 %)	50 (39.34%)
	40-50	12(20%)	56 (44.26%)
	50-60	12 (20%)	12 (9.83%)
2	**Respiratory /Breathing problems:**	03	22 (17%)
3	**Osteological problems**:		
	a) Shoulder pain	Nil	49 (38%)
	b) Neck pain	01	104 (82%)
	c) Joint pains	02	56 (44%)
	d) Back pain	02	49 (34%)
4	**Neurological problems**:		
	a) Head ache	01	31 (24%)
	b) Nausea/ Giddiness	Nil	03
	c) Nervous weakness	Nil	11 (8.7%)
	d) Senselessness of finger tips	Nil	09 (7%)
	Total	01	54 (42%)
5	**Eye problems**:		
	a) Eye burning	Nil	19 (15%)
	b) Eye watering	Nil	13 (10%)
6	Other problems: **Hysterectomy (removal of Uterus)**	Nil	28 (22%)

Results and Discussions:

The analysis showed that majority of the respondents belong to the age group of 30-50 years. 44.26% of the respondents were 40-50 years old. Total of 6.56% of the respondents belong to age group of below 30 years and 9.83% belong to the age group of above 50 years.

On an average, a beedi roller earns a monthly income of Rs 1200/- to 1500/-. And as a whole, the beedi roller earns an average total annual income between 14400/- to 18000/-.

The survey revealed that beedi roller suffered from many health problems. Out of 126 interviewed beedi rollers, 104 members (82%) suffered from neck pain, 49 members (38%) suffered from shoulder pain, 31(24%) from head ache, 56 (44%) from joint pains, 49 (38%) from back pain. 19 members (15%) suffered from eye burning, 13 members (10%) suffered from watering from eyes. 1% reported senselessness of finger tips. 17% reported respiratory problems. 54 members (42%) have reported nervous problems.

Due to infection and excessive plasma proteins in the blood, ESR significantly higher in Beedi rollers than in the control group, and the time taken for RBC sedimentation increased.

In the beedi rollers, SGPT (ALT), a test for liver dysfunction, the results were greater than in the control group. The results obtained in this study gained support from the observations of Karafakioglu et.al., (2009) which found a significant rise in SGPT level of Women worker who were involved in the harvest of tobacco.

Table: 2 Erythrocyte sedimentation rate (ESR)

Age group	30-40 yr		40-50 yr		50-60 yr	
	Exp	Ctrl	Exp	Ctrl	Exp	Ctrl
ESR 30 min	11.79	11.79	12.58	10.1	12	12
ESR 60 min	31.55	31.93	32.04	26.54	32.6	32
ESR 120 min	57.1	56.5	55.71	46.15	57.14	54

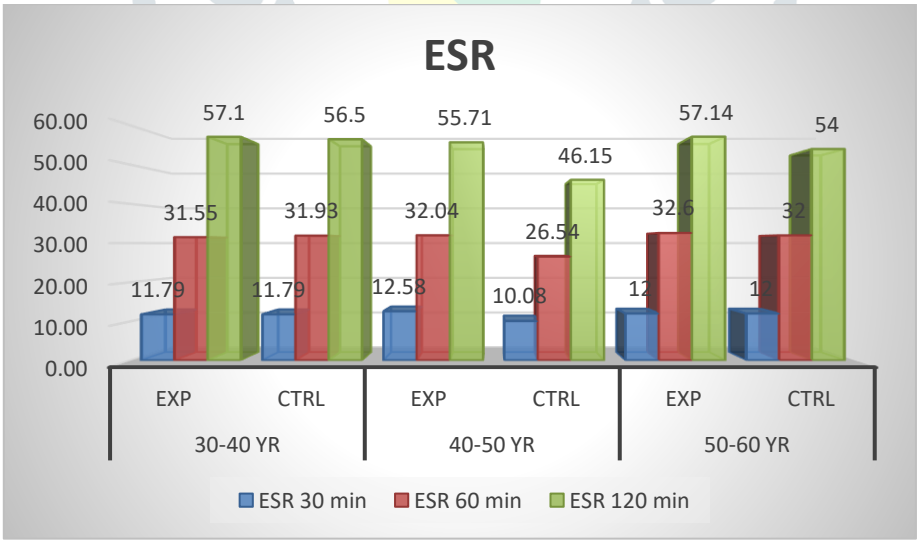

Figure 1

Table: 3

Age group	**30-40 yr**		**40-50 yr**		**50-60 yr**	
	Exp	**Ctrl**	**Exp**	**Ctrl**	**Exp**	**Ctrl**
SGPT	29.50	27.42	34.07	32.72	31.89	26.8

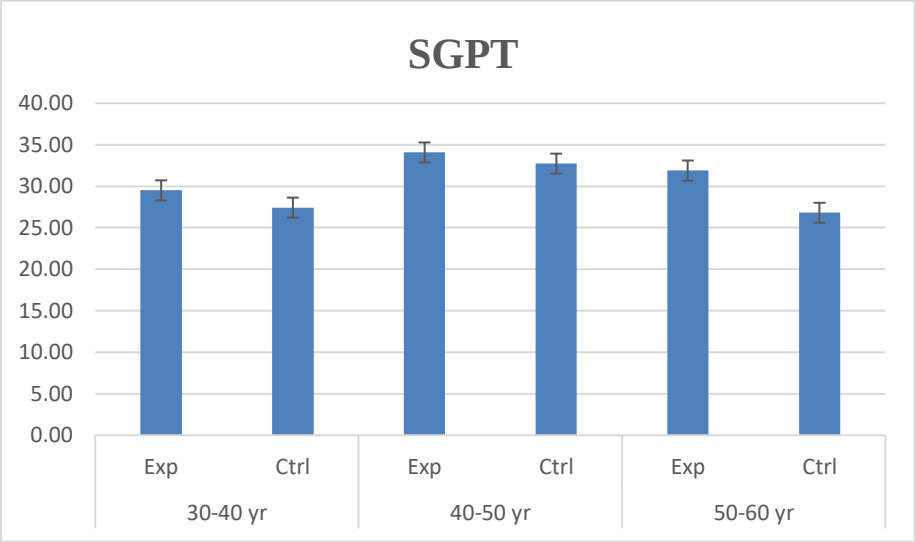

Figure 2

IV. ACKNOWLEDGMENT

I thank UGC-SERO for providing financial assistance to complete the research work under MRP.

.References

[1] .Adeniyi PA, Ghazal OK (2006) Effects of tobacco leaves extract on hematological parameters in Wistar rats. Am Cancer Soc 15(1):44–48

[2].Aghi MB, Gopal M (2001) Exploiting women and children–India's beedi industry. Lifeline 6:8–10

[3]. Aringer L, Lidums V. Influence of diet and other factors on urinary levels of thioethers. Int Arch EnvironHealth 1988;61:12330. [PubMed

[4].Bagwe AN, Bhisey RA (1991) Mutagenicity of processed beedi tobacco: possible relevance to beedi workers. Mutat Res 261(2):93–95.Bagwe AN, Bhisey RA, Govekar RB (1992) Toxic effects of exposure to tobacco among beedi rollers. ToxicolLett 22(6):1205–1206

[5].Bhisey RA, Bagwe AN (1995) Occupational exposure to unburntbeedi tobacco elevates mutagenic burden among tobaccoprocessors. Carcinogenesis 16(5):1095–1099

[6].Bhisey RA, Bagwe AN, Mahimkar MB, Buch SC (2006) Biological monitoring of beedi industry workers occupationally exposed to tobacco. Indian J Public Health 50(4):231–235

[7].Das SK, Pande RA (2000) Better deal for beedi workers. Int Arch Occup Environ Health 109(3):23–25

[8]. Dikshit R, Gupta PC, Ramasundarahettige C, Gajalakshmi V, Aleksandrowicz L, Badwe R, Kumar R, Roy S, Suraweera W, Bray F, Mallath M, Singh PK, Sinha DN, Shet AS, Gelband H, Jha P.

Cancer mortality in India: a nationally representative survey.Million Death Study Collaborators.Lancet. 2012 May 12;379(9828):1807-16.

[9].Dikshit RP, Kanhere S (2000) Tobacco habits and risk of lung, oropharyngeal and oral cavity cancer a population based casecontrol Study in Bhopal, India. Int J Epidemiol 29(8):609–614

[10]. Karafakioglu YS, Dundar Y, Aslan R, Fidan AF, Cigerci IH (2009) The effects of tobacco harvesting on oxidant- antioxidant status, some biochemical and hematological markers in women workers. Res J Biol Sci 4(6): 691- 696

[11]. Kilpikari I, Savolainen H. Increased urinary excretion of thioether in new rubber workers. Br J Ind Med. 1982;329:401–3. [PMC free article] [PubMed

[12].Mahimkar MB, Bhisey RA (1995) Occupational exposure to tobacco increases chromosomal aberrations in tobacco processors. Mutat Res 334(2):139–144

[13]. Nadin SB, Laura MV, Daniel RC. A silver staining method for single- cell Gel Assay. J HistochemCytochem. 2001;49:1183–6. [PubMed]

[14].Rajasekhar D, Muley B (2001) Identifying alternative employment and income opportunities for women beedi workers. Econ Politwkly 33(2): 71-75

[15].Ranjitsingh AJA, Padmalatha C (1995) Occupational illness of beedi rollers in south India. Env Econ 13(4):875–879

[16].Ratna S, Kaur R (1999) The tobacco industry and women's employment: old concerns and new imperatives Indian J Econ42:675-685.