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Occupational tobacco exposure and health risks of Women Bidi rollers in Bihar Sharif (Nalanda)

Gulnaz Tabassum¹, Dr. Md. Arshad Jamal²

¹ Research Scholar, P.G Dept. of Zoology Magadh University, Bodh Gaya.

² Research Guide, Associate Professor, Soghra College, Bihar Sharif, Nalanda

Abstract: *These days occupational health hazards are the emerging problems all over the world. Majority of the labor class are from the unorganized/informal/small sectors which contributes the Indian economy to a large extent. Among such informal/unorganized & lost sectors, bidi industry is one of them which is traditionally a female dominated informal sector, particularly in tobacco processing and bidi rolling processes. As such for millions of women in today's era, bidi manufacturing has become an emerging occupation for these poor women's in India. The bidi rolling is considered as a household occupation which includes a large number of female workers on a daily-wage basis. But these female workers are constantly exposed to several hazardous/killer chemicals/substances, which have a potential to cause various severe occupational diseases to the workers and their families as well. Until now, very little research has been done on the occupational health, hazards and psychosocial problems of women bidi workers in India. The current concept & review mainly focuses on serious issues/concerns about the environment, working conditions, exposures, occupational health problems & severe diseases of women bidi workers in India. One among these is the tobacco dust which contains toxic nitrosamines which are readily absorbed by the body tissues giving rise to cough, breathlessness, ocular and dermatological health problems. The present research thesis aims to identify the effects of occupational exposure of tobacco on the general health of women laborers of Nalanda district, Bihar Sharif.*

I. INTRODUCTION

The Bidi and Cigar industry employs thousands of poor people; most of them work under pitiful and hazardous conditions that are a threat to their health & life. These workers spend hours & hours blending and rolling tobacco in unhygienic, damp, dingy and overcrowded areas having very little facilities for drinking water, toilet, washing or first aid. These bidi workers are exposed to unburnt tobacco dust through cutaneous and pharyngeal route on day-to-day basis. Various studies/research have been conducted on bidi workers in order to understand the available working condition and expected health hazards and to determine whether bidi rollers are in a good condition or not. The factory owners, dealers, retailers and all of them related to bidi & cigar manufacturing take advantage of the poor workers, their lack of education and unity, in order to perpetuate exploitation. The major cons of the Factories Act, 1948 manufactures have given ways such as splitting organizations into smaller units or distribution of work in private households, to ignore its provisions. The government of India estimates that there are about 4.4 million workers who are earning livelihood through this industry. Women's Occupational Health (WOH) should hold high priority on the international agenda and represent a dynamic equilibrium state between the women workers and her occupational environment. Here, occupational health not only deals with work-related disorders or diseases, but it also includes several factors that affect workers' health (Pandve and Bhuyar, 2008). In today's era, the issue of occupational hazards assessment at workplace is of great concern. However, nearly or more than 90% of the workforce in India is working within the unorganized sector (Gopalan, 1995; Sheila, 2006; Sharma, 2012) where the levels of technology & facilities are low. One of the largest segment of the labor force in the country are from the unorganized sector including about 41.35 lakh in bidi industry. Thus, Bidi manufacturing is one of the major & expanded informal sector activities in India in which maximum numbers of poor & unprivileged home-based women workers are engaged in bidi rolling activities. Therefore, there is a dire need to improve both the living and working conditions of these poor workers as well as to promote and provide decent employment and income opportunities to these women bidi rollers.

II. MATERIAL AND METHODS

This research used a very descriptive designing. The sample for the study comprises of female bidi workers/rollers. A total of 200 female bidi workers were considered as the subject for this study, actively involved in the bidi rolling process. Purposive random sampling technique was brought in concern for sample selection. Only those female workers of the families, who were directly involved in bidi work and were ready to answer the schedule, were involved for the study. The subjects were divided into two groups – tobacco

co users & Non-tobacco users. A standard questionnaire related to health issues, tobacco use and smoking habit was prepared in order to observe the health effects on female workers.

This entire study aimed at retrieving insights about the occupational health problems undergone by the female bidi workers on a daily basis at Nalanda district. This study conducted research on 50 such families using a purposive sampling method. The sole objective of the study was to gather status of the working conditions & health hazards.

III. RESULT

Since, tobacco causes many human health risks both directly/indirectly. The present study involved 200 female bidi workers as a sample. Among these: 100 were tobacco users and the rest 100 were non-tobacco users respectively. For the study, the demographic details and systemic features of these 200 women laborers were given in tables 1 and 2 respectively. Further, the results indicated that issues of headache, weakness, sneezing, nausea, irritation & dryness of throat, and nail discoloration were prominent & higher in non-tobacco users because they are much more sensitive towards tobacco and its exposure than tobacco users.

Table 1: Background of the Respondents

Information	Total number of bidi workers	Tobacco users	Non tobacco users
(a) Total number of respondents (Female Laborers)	200	100	100
Work characteristics			
(b) Socio-economic status	Poor		
(c) Working years	5 to 40 years		
(e) Bidi rolled per day	2 hour (minimum)		
	8-10 hour (maximum)		
	400 to 1200 per day		

Table 2: Health Status of Women Laborers of Bidi-Industry

	Symptoms	No. of respondents	
		Users	And non users
1.	Headache	3	4
2.	Backache	7	2
3.	Skin irritation	7	7
4.	Eye irritation	12	15
5.	Vomiting / Nausea	1	3
6.	Difficulty in breathing	12	9
7.	Nose irritation	3	3
8.	Breathlessness	5	3
9.	Loss of appetite	10	8
10.	Weakness	4	6

IV. DISCUSSION

Since, bidi manufacturing is one of the second largest industry in India (Shimkhada and Peabody, 2003) which imparts employment to mostly women and children belonging to the poor socio-economic strata (Shimkhada and Peabody, 2003; Aghi 2003). Therefore, considering the high content of nicotine and other harmful chemicals in bidi & tobacco, these workers are at an extreme high risk of systemic illness (Malson *et al.*, 2001). Nicotine is one the major components of tobacco. Since, tobacco has about 4000 active chemical compounds including nitrosamines, polycyclic aromatic hydrocarbon elements and cadmium (Robert, 1988). According to Mittal (Mittal *et al.*, 2008) theory, ocular manifestations are also profound in bidi rollers. The final result of this study correlates well with (Mittal *et al.*, 2008) theory. Also, eye irritation was found in almost 13.5% of female bidi workers/rollers.

It's already known that tobacco dust consists of several toxic substances including - nitrosamines, which are readily absorbed by body tissues like skin, mucous membrane of mouth & nose and respiratory epithelium (Chattopadhyay *et al.*, 2006). As a result of which

ch, prevalence of cough with breathlessness, difficulty in breathing, morning cough etc. was comparatively much higher in tobacco users

V. CONCLUSION

Our conclusion is based on several health hazards where the subjects are aware of the harmful effects of tobacco usage. There is an urgent need to enhance knowledge about the side effects of smoking among the disadvantaged crowd of the population. Results of the present research prove that:

- A. Bidi tobacco is very harmful for the workers who inhale tobacco during bidi rolling both actively or passively.
- B. The bad health impact on bidi workers is visible on all age groups workers.
- C. Continuous bidi rolling process leads to nicotine absorption directly through skin (The CNN freedom project, 2012). Several bidi workers welfare schemes are being implemented by the Govt. in the field of health, recreation, education, housing & social security like:
- D. Recently, the govt. has sanctioned 4 new hospitals and 40 dispensaries in concern of the bidi workers.
- E. Govt. has also extended Rashtriya Swasthya Bima Yojna (RSBY) for bidi workers. (Ministry of Labor & Employment, 12 Dec., 2011).

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