

Health Hazards And Quality Of Life Of The Workers In Tobacco Industries: Study From Three Selected Tobacco Industries At Gangachara Thana In Rangpur District Of Bangladesh

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Citation

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Abstract

Objectives: This paper investigates the impact of tobacco on the health status and the quality of life of the tobacco industries workers in Bangladesh by examining the situation prevailing in three selected tobacco industries. **Methods:** This study analyzes data of 500 tobacco industries workers collected from a field survey from three selected tobacco industries at Gangachara Thana in Rangpur district of Bangladesh. Univariate, bivariate and multivariate logistic regression method were employed in analyzing the data. **Results:** It is observed that largest percentage of workers involved in bidi making followed by gull and jarda processing. The sanitation facilities and the ventilation facilities provided by the industries are not so well. Respondents who were working in the factory about 68% of them suffering from various kinds of lung diseases of them maximum suffering from asthma (32%) but interestingly only 5% workers said that in some times the factory give medical allowances some times but it did not fulfill their demand. Bivariate analysis shows that workers who did not use mask during their working period were nearly 5 times more developed the diseases. It was also found that workers socio-economic condition is not so well. Multivariate logistic analysis unveils that children and older persons were more vulnerable for such kinds of diseases and also as the duration of working in the factory increases the risk of diseases also increases. The other contributing factors for health hazards due to tobacco of the tobacco workers are found to be types of works, types of drug addiction, and average hours of work and duration of work in the factory. **Conclusions:** The results indicate several policy options: (a) the need for creation of awareness among the workers regarding causes of how they are being affected physically how could they are able to overcome the problems; (b) as the majority of the workers were illiterate investment in education for our children and initiatives for equality for women would help the poor to rise from their deplorable conditions in tobacco-related employment; (c) "Tobacco Control Law" should be modified to cover other types of tobacco products and to increase their prices; (d) There is need to ensure the availability of health care centers and proper sanitation facilities by the industries; ; (e) It is equally important that a portion of the profits gained from the sale of tobacco products should evenly distributed among those involved in the work education to bring about a lasting impact on the overall health condition of the tobacco workers.

INTRODUCTION

Bangladesh is an over populated country in the world. A large proportion of the people are living below the poverty line, with an in enviable living condition and health status. The import and usage of tobacco products are progressively increasing in Bangladesh National health data in Bangladesh revealed that tobacco use is a major public health problem with prevalence of 37% and imposes a huge burden on health care services with its associated mortality and morbidity especially coronary heart disease and cancer¹. It has been known for many decades that tobacco is the leading

preventable cause of ill health and premature death in the world. It causes 1 in 10 deaths among adults and about 4 million premature deaths worldwide².

Available data in the Bangladesh indicate a considerable and steady increase in tobacco consumption over the past three decades. Moreover, imports and manufacture of cigarettes are progressively increasing in this country³. Within the country, the problems of environmental pollution are most acute in the surrounding areas of tobacco industries. Tobacco workers are working in an unhygienic environment

in their working place and they are suffering from various lungs diseases and some other types of diseases throughout the year⁴. Continuous inhalation of tobacco dust creates many diseases. Passive smoking also creates lungs diseases of tobacco workers. Risk of lung cancer, heart diseases, bronchitis, pneumonia and respiratory illness of the workers are increasing day by day. Moreover a large number of tobacco workers live in overcrowded and unhealthy environment where basic services and utilities are either absent or grossly inadequate⁵. Most of the workers houses are kancha huts made of bamboo, wooden boards or plastic. They always use kancha or open or hanging latrine and kancha drains for their toileting. So, it creates health hazards some time throughout the year or in continuous form, because of environmental pollution. Countries main bidi producing industries are mainly located in greater Rangpur, Khustia and Mymensingh. According to Bangladesh Institute of Labour Studies there are about 10.4 million workers are engaged in bidi industries in which many women and children involved in bidi production. Profits from the sale of tobacco products are not evenly distributed among those involved in the work. Much of the economic gain from tobacco remains in the hands of a powerful few, while a vast number of workers remain desperately poor. So it is necessary to undertake a study to know the effect of tobacco on human health and quality of life of the workers in the tobacco industries, so that appropriate remedial measures can be taken for gradual improvement of the quality of life of the tobacco workers. Very few studies on health hazards and quality of life of the workers in tobacco industries have so far been conducted in Bangladesh. So the present study has an attempt to investigate the effect of tobacco on the health status and quality of life of tobacco industries workers.

METHODS AND MATERIALS

The data were collected from a field survey conducted at Gangachara Thana in the district of Rajshahi of Bangladesh from May 25 to July 30 in 2008. These data were collected from three tobacco industries of Gangachara Thana. Information was collected from 500 workers by interview method. Respondents were selected by purposive sampling method. Bivariate analysis was performed to determine the differentials of health hazards due to tobacco of the various tobacco industries workers by explanatory variables. Considering the fact that among multivariate techniques the Cox's linear logistic regression model is algebraically simple, computationally straightforward and efficient with

acceptable degree of precision for a binary dependent variable, this study applied Cox's linear logistic regression model⁶ for multivariate analysis.

RESULTS

Before going directly into the findings concerning the impact of tobacco on the health status of the tobacco workers, it is appropriate to examine profiles of the tobacco workers. If we look at table-1 we observe that maximum respondents were illiterate (63.0 %) and only a fewer portion of them having secondary level education (8.0%). With respect to the types or work the workers involved in the factory we see that about 56.0 % involved in bidi making, 24.2% in gull processing and the rest of 19.8% workers involved in jarda processing. We also see from the table 1 that majority of the workers produced 5-6 thousands bidi per day and the percentage being 45.5 and about 60.5 and 50.5 % workers processing 20-25 gm gull and 10 gross jarda per day. The table also unveils that major portion of the respondents monthly income lies below 2000 Tk. and a few portion of them earned 4000 tk. and more (12.5%) and 50.3 and 39.5% respondents lived in kancha and tinsheed house. Regarding type of drug addiction of the workers we see that vast portion of them was smokers followed by gull and jarda users. The respondents were asked what is their cause of involvement in tobacco industry then 51.0% of them said that due to financial problems, 41.0% due to unavailability of work and the rest of 8.0 % said that they involved in such hazardous work because of the industries are near to their home.

Figure 1

Table 1: Profile of the respondents

Characteristics	Percentage	Characteristics	Percentage
Education of the respondents		Average hour of working of respondents	
Illiterate	63.0	8	41.5
Primary	29.0	10+	58.5
Secondary	8.0		
Types of work		Use mask during work	
Bidi making	56.0	Yes	85.0
Gull Processing	24.2	No	15.0
Jarda Processing	19.8		
Amount of cigarette (thon)		Distribution of respondents according to Type of disease	
3-4	35.5	NO diseases	42.0
5-6	45.5	Tuberculosis	8.0
7-8	19.0	Bronchitis	10.0
		Asthma	32.0
		Others	3.0
Amount of gull processing (gro)		Treatment quality	
10-14	25.5	Do not take treatment	21.5
15-19	14.0	Allopath	44.5
20-25	60.5	Homeopathy	13.5
		Unani	10.5
Amount of jarda making (gro)		Medical facilities provided by the factory	
8	26.0	Satisfactory	0.0
9	23.5	Little	5.0
10	50.5	None	95.0
Monthly income		Ventilation facility of the factory	
<2000	60.5	Well	24.6
20003-3000	27.0	Not well	75.4
4000+	12.5		
Type of drug addiction of the respondents		Sanitation Facility	
Smoking	62.5	Satisfactory	22.3
Gull	27.0	Unsatisfactory	77.3
Jarda	5.5		
Cause of involvement in tobacco industry		House type	
Lack of work	41.0	Kacha	50.3
Economic problem	51.0	Pacca	10.2
Near to factory	8.0	tinshedd	39.5

From table 1 we see that most of the respondents the average hours of work were 10 hours and above and its percentage is 58.5 and 41.5% respondent's worked for 8 hours and only 15.0% respondent's used mask during working hour in the factory. It is also seen that about 32.0% workers were suffering from asthma, 10.0% from bronchitis, 8.0% from tuberculosis and the remaining 3% from other kinds of diseases (heart diseases, oral disease etc.,). Workers who were suffering from such kinds of lung diseases were asked whether they received any kind of treatment then diseases then 44.5% workers said that they received allopath treatment, 13.5 % received homeopathy treatment, 10.5 % unani treatment and the rest of 21.5% said that they did not received any kind of treatment. It is also found that only 5.0% workers said that the factory provide medical facilities only a little bit and 24.6 and 22.3% workers said that the ventilation and sanitation facility provides by the factory is satisfactory

Now we have computed the percentage distribution of the workers whether they suffering from any types of lung diseases according to some selected socio-demographic and environmental related characteristics. From table 2 we see that children and higher aged workers are more suffering from the lung diseases, it is also found that workers with no education and with primary education were suffering more

from lung diseases. Among the workers who were sufferings from various kinds of lung diseases 48.6% were involved in gull processing work followed by 32.2% bidi making and 19.2% of them involved in jarda processing work. The table also depicts that maximum number of workers (62.0 %) were suffering from various kinds of lung diseases whose average hours of working period is 10 hours and above. Those who were drug addicted and suffering form diseases 52.2% of them were smokers, 35.5% taking gull and the remaining 12.3 % used jarda. Table 2 also elucidates that those who did not use mask 78.4% of them suffering from various kinds of lung diseases. It can be also seen from this table that as the duration of engaging in such hazardous work increases respondents risk of contacting with various types of lung diseases also increases, those respondents who were engaged in such types of wok from 10 years and above they developed the diseases two times more than from the respondents who were involved in such type of work from less than 5 years.

Figure 2

Table 2: Percentage distribution of the respondents according to suffering from lunge diseases in the tobacco industry and various socio-demographic and environmental related factors

Characteristics	Suffering from lung disease (percentage)
Age group	
Less than 15	22.0
15-19	11.0
20-34	14.5
35-49	17.9
50+	34.6
Education	
Illiterate	29.7
Primary	55.1
Secondary	15.2
Types of work	
Bidi making	32.2
Gull processing	48.6
Jarda processing	19.2
Average hours of working	
8	38.0
10+	62.0
Drug addiction	
Smoking	52.2
Gull	35.5
jarda	12.3
Use of mask	
Yes	20.6
No	78.4
Duration of work in the factory	
<5 years	20.6
5-10 years	36.5
10+ years	42.9

We now wanted to see if there is any factors associated with health hazards due to tobacco of the tobacco industry workers and if any, how much did those factors contribute to health hazard of the tobacco workers. For this purpose binary logistic model has been fitted. The response variable for the model has two categories: if the workers suffering from lung diseases (coded 1) and if not (coded 0). The following table 3 gives the estimates of logistic regression co

efficient (?) and odds ratios for corresponding independent variable. It is observed from table 3 that respondents belonging to ages 50 and over were 1.653 times more likely to suffering from lung diseases than from the respondents who were less than 15 years of old. It is also found that primary educated workers were 2.333 times more likely to suffer from the lung disease and respondents who were secondary educated were 0.538 times less likely to suffering from lung diseases than the respondents who were illiterate. Respondents who were involved in gull processing and jarda processing work were 1.669 times more and 0.586 times less likely to affect from the respondents who were involved in bidi making work. Regarding respondents types of drug addiction who were using gull and jarda as a drug were 0.693 and 0.259 times less likely to affect by lung diseases than from the workers who were smokers.

Figure 3

Table 3: Result of logistic analysis impact on health status of tobacco worker.

Variables	Suffering from lung diseases	
	Co-efficient β	Odds Ratio
Respondents age		
<15 (Ref)	--	1.000
15-19	-0.437	0.347
20-34	-1.209	0.568
35-49	-0.215	0.287
50+	1.365	1.653
Respondent's education		
Illiterate (Ref)	--	1.000
primary	1.173	2.333
Secondary	-0.237	0.538***
Types of works		
Cigarette making (Ref)	--	1.000
Gull processing	0.512	1.669***
Jarda processing	-0.837	0.586*
Type of drug addiction		
Smoking (Ref)	--	1.000
Gull using	-0.568	0.693**
Jarda using	-0.236	0.236
Average Working hours per day		
8 hours (Ref)	--	1.000
10+	0.642	1.526**
Using mask during work		
Yes (Ref)	--	1.000
No	1.512	5.563***
Duration of work in the factory		
<5 year	--	1.000
5-10	0.693	1.623
10+	0.993	2.251***

Significance level: * = $P < 0.05$; ** = $P < 0.01$; *** = $P < 0.001$

Those respondents whose average hours of working was 10 hours and over per day were 1.526 times more likely to suffer from lung diseases than from the respondents whose average hours of working hour was 8 hours. Respondent who were not using mask during working hour were 5.563 times more likely to affect by various kinds of lung diseases than from the respondents who used mask. Respondents who were working in the tobacco industries 10 years and above were 2.251 times more likely developed the diseases than from the respondents who were involved in such types of

work less than 5 years.

DISCUSSIONS

It is observed that largest percentages of workers were illiterate and only a fewer portion of them having secondary level education. It is also found that majority of them involved in bidi making followed by gull and jarda processing. Regarding type of drug addiction of the workers we see that vast portion of them was smokers followed by gull and jarda users and majority of them said the reasons for involving in the tobacco industry due financial problems and unavailability of work. The sanitation facilities and the ventilation facilities provided by the industries are not so well. A pathetic scenario found in our study that those respondents who were working in the factory about 68% of them suffering from various kinds of lung diseases of them maximum of them suffering from asthma (32%) but interestingly the factory doses not provide any kinds of treatment facility fro them only 5% workers said that in some times the factory give medical allowances some times but it did not fulfill their demand.. The finding reveals that workers who used mask few portions of them suffering from lung diseases than those who do not use the mask at all. The study also found that children and older persons were more vulnerable for such kinds of diseases and also as the duration of working in the factory increases the risk of diseases also increases.

The study also unveils that as the duration of engaging in such hazardous work increases respondents risk of contacting with various types of lung diseases also increases, those respondents who were engaged in such types of wok from 10 years and above they developed the diseases two times more than from the respondents who were involved in such type of work from less than 5 years. It was also found in our study that although the workers were doing such types of hazardous work their socio-economic condition is not so well; major portion of them lived in kancha and tinsheed house and the income gained from this employment is barely enough to sustain them, or is insufficient to meet the most basic of need (maximum workers monthly income lies below 2000Tk). From The logistic model it is appeared that education has strong positive association with the risk of contacting lung diseases. Well-educated persons know the harmful effects of tobacco on health. The educated workers are usually more conscious about the health hazards of tobacco and thereby encourage and help to use mask during working hours. The model also shows that those workers

who did not use mask during their working period were nearly 5 times more developed the diseases than those who used the mask. The other contributing factors for health hazards due to tobacco of the tobacco workers are found to be types of works, types of drug addiction, and average hours of work and duration of work in the factory.

If the tobacco workers could know the causes of how they are being affected physically and mentally they could be able to overcome the problems. They could also be able to make aware their fellow colleagues, family members and community people about the consequences of the polluted work places. Make the information available to the planners of the relevant department of government and non-government organizations who can take appropriate actions to improve the situation. As the majority of the workers were illiterate investment in education for our children and initiatives for equality for women would help the poor to rise from their deplorable conditions in tobacco-related employment, while bringing significant economic benefits for the country as a whole as well. In addition to looking at those whose employment is related to tobacco, we also investigate some of the more vulnerable population groups who use tobacco, specifically street children and pavement-dwelling families. For the poorest of the poor, who happen to be the most likely to use tobacco, daily expenditures on tobacco products represent a significant portion of daily income, and a further hindrance to the investments needed to

help lift them out of poverty. A portion of the profits gained from the sale of tobacco products should evenly distributed among those involved in the work. Besides the tobacco control law as already introduced by the government of Bangladesh named “Tobacco Control Law” in 13th March 2005 should be modified to cover other types of tobacco products and to increase their prices. Also smoking cessation services should be provided through a network of primary care- based or workplace smoking cessation clinics. Lastly more research about the effectiveness of these measures is needed.

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