



## Safety Awareness and Worker's Health Hazards in the Garments Sector of Bangladesh

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### ABSTRACT

*Though the economy of Bangladesh stands on the garments sector and the largest profit earning sector by exporting the products of the garment industry, the manpower of that sector are most deprived from their minimum rights even they are paralyzed by physically and mentally gradually. Millions of workers in more than 5000 garments industries are suffering from numerous problems. Habitation system, imbalance diet and tight economy condition make them compel to lead a hazardous life even to the way of death. The causes of the health hazards including the industrials production, dyeing, washing and others sectors that involved the effect of cotton dust, chemical reagents, poor ergonomic design and others are integrated in this paper. This paper also shows the severity of cotton dust on the human body and a survey on the worker's health hazards in percentage of the different problems and diseases. Finally, this paper concludes by highlighting some remedial ways to take attention of the management of the garments industry and their self-awareness that will be the catalyst to take prevention against their health hazards.*

**Key words:** Garments, Garments workers, Health hazards of the workers, Safety, Safety awareness, Poor ergonomic design, Cotton dust and its severity, Prevention ways against health hazards

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### INTRODUCTION

A garments industry consists of spinning, dyeing, washing, production, finishing and others sectors. All of these sector deal with the fabrics and there also have some sector that associate chemicals that are hazardous for our health. The textiles sector contains many hazards and risks to workers, ranging from exposure to noise and dangerous substances, to manual handling and working with dangerous machinery. Each processing stage - from the production of materials to the manufacturing, finishing, colouring and packaging - poses risks for workers.

According to WHO (1948), 'Health is a state of complete physical, mental and social wellbeing and not merely the absence of diseases or infirmity'. But Bangladeshi garment workers are unable to maintain any of the health condition prescribed by the WHO. From the majority of workers (55%) complained about musculoskeletal problem. This was followed by neural problem such as headache (40%), respiratory (30%), skin problem (13%), numbness of hands and fingers (8%), hearing (5%) and visual discomfort (2%) [1].

Hazardous conditions of work range from the exposure to lint dust in an apparel factory to exposure to toxic chemicals in the recycling of electronic waste. It affects the body muscles, joints, tendons, ligaments, bones and nerves. The monotonous work lead to increased worker fatigue due to continuous handling of loads, prolonged standing, repetitive movement of both hands and wrists and awkward postures [3]. The employers and policy makers generally do not recognize occupational safety and health as a priority. National discussion about OSH issues tends to arise only in response to major industrial accidents. Bangladesh has not ratified the core Occupational Safety and Health Convention (No. 155). The Labour Act provides the opportunity for workers, their families and trade unions to file court cases for compensation in the event of work-related accidents and diseases. Knowledge about occupational diseases and the capacity to pursue legal authority is very limited, however, and the labour court system is weak [4].

Numerous problems that have to be faced by the workers in a garments or apparels manufacturing industry make them injured day by day. After a certain period of work in a garments industry they make their life with a great risk. According to the statistics of Bangladesh Garment Manufacturers and Exporters Association (BGMEA), in Bangla-

desh there are more than 5000 garments industries and millions of workers involved there. Most of them lead their life below the poverty line. Malnutrition, poor habitation and hazardous working environment make their life into a great risk. Cough, chest pain, back pain, neck pain, obesity, high blood pressure, gastric problem etc. are their common phenomenon of their life. After a certain period, many of them suffer from life risk diseases like hepatitis B virus, asbestosis, silicosis, mesothelioma, lung cancer and others. It is a matter of great regret that they are playing a vital role to increase the GDP of the country continuously but concentration of the authority and the government to them is very negligible. In this research some of the causes have been integrated and the effect of these causes on human body have been analysed. The crucial factors behind the health hazards of the workers in a garments industry are:

- Exposure to cotton dust
- Exposure to chemicals
- Exposure to noise
- Ergonomic issues

## CAUSES OF HEALTH HAZARDS

### Health Hazards in the Production Floor

Production floor of the most of the industries can't provide a good working environment for the workers. Due to poor environment the workers suffer different types of problems. From the surveying different garments industry, there has been summarized the mostly common problems of the production floor and that are exposure to sound, exposure to cotton dust, poor working environment, fatigue due to manually operated machines, long time working in the factory.

### Continuous Machine Sound

High levels of noise have been observed in most of the units engaged in the textile industry, particularly those in developing countries. In the long run, exposure to high noise levels has been known to damage the eardrum and cause hearing loss. Other problems like fatigue, absenteeism, annoyance, anxiety, reduction in efficiency, changes in pulse rate and blood pressure as well as sleep disorders have also been noted on account of continuous exposure to noise. Lack of efficient maintenance of machinery is one of the major reasons behind the noise pollution in a majority of the units. Though it causes serious health effects, exposure to noise is often ignored by textile units because its effects are not immediately visible and there is an absence of pain.

### Exposure to Cotton Dust

The workers engaged in the processing and spinning of cotton are exposed to significant amounts of cotton dust. They are also exposed to particles of pesticides and soil. Exposure to cotton dust and other particles leads to respiratory disorders among the textile workers. The fatal disease of byssinosis, commonly known as brown lung, is caused among people working in the textile industry on account of excessive exposure to cotton dust. The symptoms of this disease include tightening of the chest, coughing, wheezing and shortness of breath.

### Poor Working Environment

Congested production floor, insufficient light and air, dust from the machines make the workers weak and also reduce the efficiency of the workers. The poor working environment sometimes is the cause of different diseases of the workers. There are some industries that are not reconstructed for a long time. The poor lighting system creates eye problem. Where these problems are severe the workers cannot stay long time. The oldest and poor constructed building cannot reflect the light and creates utter darkness in the floor. For the long time work is requires ergonomically designed chair and working tables and sufficient space due to change posture. Most of the garments industries do not have ergonomically designed working condition, due to these problems the workers suffer from back pain, losses their eyesight and others problems.

### Manually Operated Machines

There are some garments industries where the management cannot yet replace all the manually operated machines by the automated machines. The manually operated machines not only decrease the efficiency of the workers but also create the fatigues of the workers. In the many industries the management replaced all the manually operated machines. But in the rest of the industries the workers suffer from different health hazards like knee pain, muscle pain and others. Due to the long term process many of them paralyzed by leg or hand.

### Long Time Working

It is very simple to have working pressure in the garments industries due to right time shipments or too much order pressure. In these situations, the workers have to work for a long time. It normally goes to 11-14 hours. But there is no shifting system. When these run continuously half month even a month but no shifting system the workers cannot get sufficient time to sleep, to take food let alone the rest. More than 90% of the industries do not provide any dormitory system for the workers even who provides the condition of the dormitory like head thrust of the workers. All the time they suffer from snivel, catarrh, cough, chest pain, lungs problems and others.

### Problems Due to Taking Imbalanced Diet

Since the income level of the garments workers is very poor, they can't fulfil the basic needs. Sometimes they have to strive. Their condition is hand to mouth where it is difficult to take fresh and balanced diet for a whole month. So they always suffer from malnutrition, diarrhoea, dysentery, less appetite, food poisoning, pain in abdomen, and gastric pain. The most of the health problems that the garment workers suffered arose from the occupational hazards including long working hours, absence of leave facilities, congested and over-crowded working conditions, absence of health facilities and safety measures, absence of staff amenities, lack of safe drinking water etc. [5].

Most of the garments industries cannot provide sufficient advantages for their better work environment. Not only in the production floor but also in the dyeing section, printing section, finishing section, washing section and in every section the worker suffer from different problems. The worker's salary of the Bangladesh garments/apparels limited is very poor. They are deprived from their rights; by the minimum wages they cannot overcome their deplorable condition. A survey on Fakir Apparels Ltd. highlights by the following Table 1 and Table 2 the percentage of the workers' health hazards in different section and also due to insufficient provided facilities. Table -1 represents the percentage of the worker health hazards results in by the survey on 400 workers of Fakir Apparels Ltd and also table 2 represents the percentage of the workers' health hazards in the printing and dyeing section on the survey of 90 workers and 400 workers that focused the problems due to poor ergonomics design.

Due to continuous work without rest in the same posture and also poor ergonomics design of the workstation causes back pain, neck pain, wrist pain, muscle pain and others. There is a lack of awareness among the workers and the management that includes safety musk, apron, hand gloves, safety taring and others. In the production line there creates micro cotton dust that causes caught, nasal problem and finally attack the lung. The cotton dust can cause an ultimate problem of the lung like lung cancer. The affected lung, mesothelioma, tumor and silicosis due to the cotton dust in the production section, dyeing section and printing section also the due the chemicals used in the dyeing and washing section are shown by the following Fig.1-9.

The cotton dust is responsible for the Asbestosis, Byssinosis, Silicosis and others dangerous diseases. Even this can cause lung cancer. Due to having lack of awareness among the workers, most of the workers do not use musk for the protection from the dust. Again the micro cotton dust cannot be protected simply by using mask. Table -3 represents the name of diseases and the problems caused by cotton dust in a garments industry.

**Table-1 Health Hazards of the Workers in Percentage Due to Insufficient Facilities in the Production Floor and Imbalanced Diet**

Hazards faced in the production floor			Hazards due to taking imbalanced diet		
Problems faced by workers	No. of workers	% of the workers	Problems faced by workers	No. of workers	% of the workers
Back pain	160	40%	Malnutrition	285	71.25%
Muscle fatigue	74	18.50%	Food poisoning	145	36.25%
Neck pain	20	5%	Less appetite	75	18.75%
Eye strain	10	2.5%	Chronic Disease	54	13.50%
Eczema	68	17%	High blood pressure	40	10%
Cough	134	33.50%	Tooth decay	74	18.50%
Sore throat	35	8.75%	Obesity	64	16%
Acne	43	10.75%	Osteoporosis and bone frac-	44	11%
Pain at joint	60	15%	Gastric pain	55	13.75%
Eye problem	30	7.50%	Headache	48	12%
Chest pain	85	21.25%	Hepatitis (Jaundice)	15	3.75%
Hearing problem	69	17.25%	Breathing problem	38	9.50%
Others	47	11.75%	Others	52	13%

**Table-2 Health Hazards of the Workers in Percentage Due to Insufficient Facilities in the Dyeing and Printing Section and Poor Ergonomics Design**

Health Hazards in the dyeing and printing section			Health Hazards due to poor ergonomics design		
Name of the problems faced by workers	No. of workers	% of the workers	Name of the problems faced by workers	No. of workers	% of the workers
Eczema	35	38.88%	Back pain	140	35%
Nasal and lung problem	38	42.22%	Loss of muscle function	75	18.75%
Asbestosis	22	24.44%	Pain in the shoulders, neck, or upper or lower back	91	22.75%
Silicosis	18	20%	Pain in the fingers and wrists	85	21.25%
Others	23	25.55%	Others	64	16%

Table-3 List of Problems of the Garments Workers Due to Cotton Dust and Chemicals

Problems ( Diseases)	Diseases caused by
Asbestosis	From long-term exposure to asbestos dust being incorporated into lung tissue
Byssinosis	Exposure to cotton, hemp or flax dust causes bronchoconstriction
Exposure to irritant gases	Accidental exposure to chlorine, sulphur dioxide, nitrogen dioxide, ammonia, hydrogen sulphide and other gases can lead to acute lung damage
Red cedar dust asthma	Red cedar dust can cause acute asthma and lung fibrosis in sensitized patients



Fig.1: Operator working condition



Fig.2: 30° neck angle



Fig.3: Neck pain [6]



Fig.4: Back pain [6]

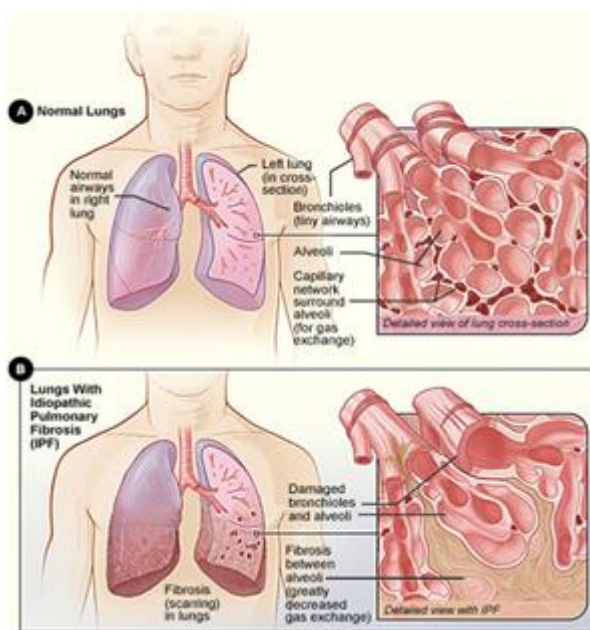


Fig.5 Silicosis [7]

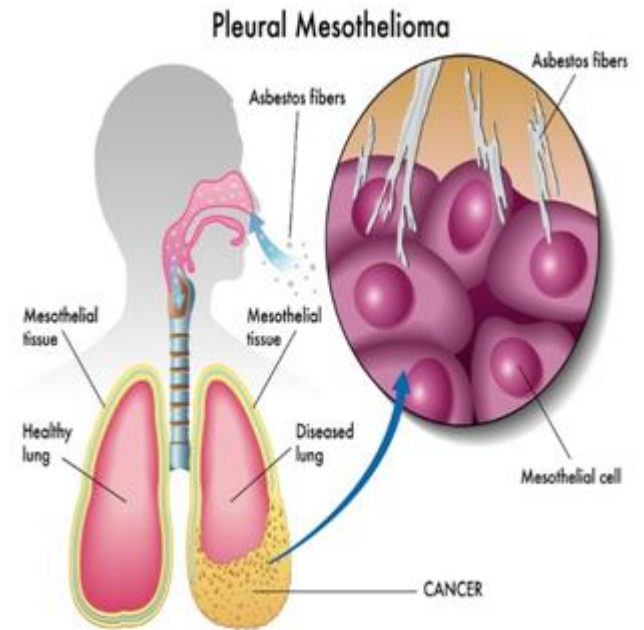


Fig.6 Lung cancer [8]

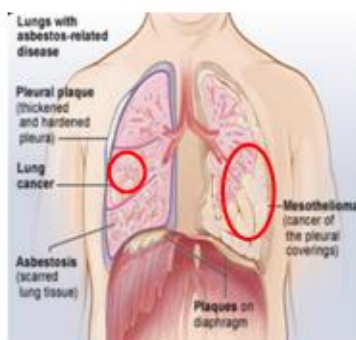


Fig.7 Asbestos-related lungs diseases [9]

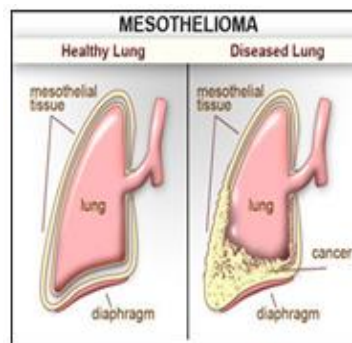


Fig.8 Mesothelioma [10]

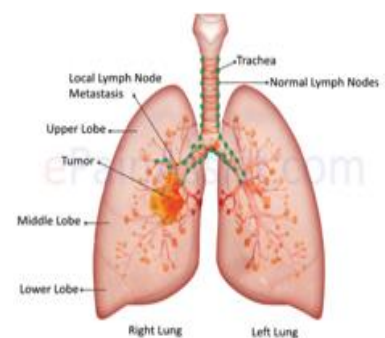


Fig.9 Lung Tumour [9]

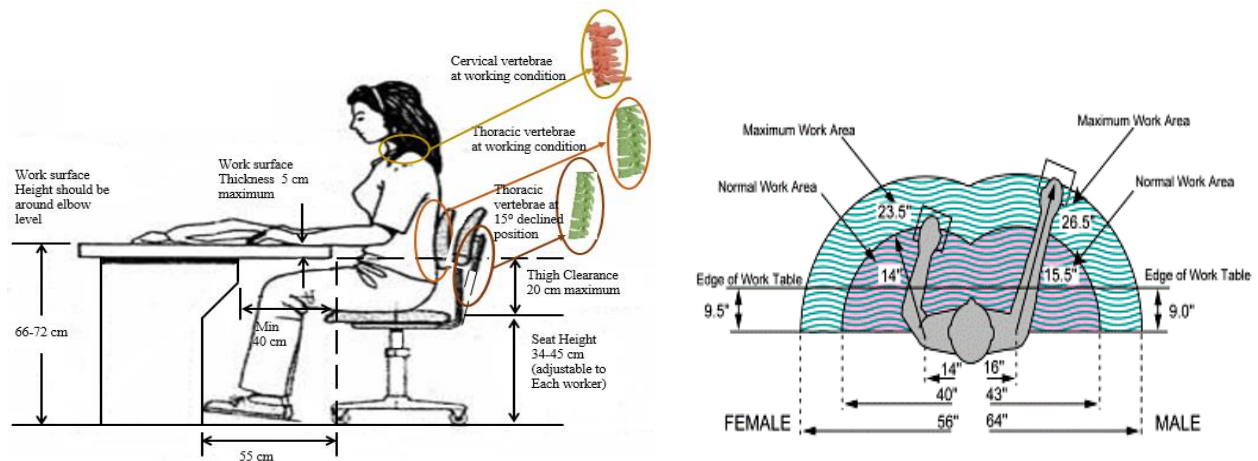


Fig.10: Ergonomic workstation design (a) Ergonomic chair (b) Working surface of an operator

### ACTIONS TO TACKLE HEALTH HAZARDS

- In the production floor and spinning section all the operator and helper must use the safety musk. The management rule also is strike and has to ensure that all are using musk. The manually operated machine is the cause of fatigue and the operator may lose the capability of movement of his hand or leg due to continuous work. Though most of the garments already have replaced the manually operated machines by automatic one, the rest of the should replace as soon as possible.
- In the dyeing and washing section the worker must use musk and also use hand gloves. Because the chemical agents affect the skin and causes different skin diseases like eczema and others. There will have sufficient ways to exit the generated high temperature from the dyeing section. Most of the garments industries there are two shifting system that make the workers physically weak and decreases the efficiency to work. The management should follow three shifting system to consider the view of worker's condition.
- It is quite impossible to take breakfast within 10-15 minutes for thousands of workers from a single canteen. To avoid this problem many, go outside the factory and take more than the allocated time. The management can develop this system by allocate the different time for different units that will also take less time.
- It has been seen that the worker in the finishing department work all the time standing until all the quantity finishes. They have to pass the whole day by standing even in the night when shipment pressure arises. There are few garments where there are shifting systems in the finishing unit. That creates the fatigue and also decreases the efficiency of them. The management should follow the shifting system or interval during their working period.
- The workstation should design ergonomically. The ergonomic designed workstation gives the worker long time working capability and increases the efficiency. The below Fig.10 shows an ergonomic designed workstation of a worker with its height, clearance and different angles [11].

### DISCUSSION

Though the workers are the main driving source against the production, production efficiency, company FOB, profit and others, they are neglected from their safety assurance, minimum life style and forced to work for a long time that exceed 13 or 14 hours. It is a matter of regret that they have to lead the life towards the death not to having the knowledge about how life goes to risk by cotton dust, chemical reagent, continuous sound and others. There are many garments industries in Bangladesh that do not provide any safety training, safety awareness and safety accessories. 'Safety first' has to be compelled among them and have to create self-awareness among that will help them to make a tendency 'first safety then work'. Since the workers are playing a vital rule for the sack of the industry, the authority should assure a better life where they can be free from the health hazards and also can lead a peaceful life.

### CONCLUSIONS

The integration of the causes of health hazards of the worker's in a garments industries have been highlighted through this paper. These make them and the management of that organization against these problems. The life risk not only in the production floor but also in all the floors has been discussed. The severity of cotton dust and the diseases caused by cotton and also by chemicals and the lack of ergonomic design have been integrated here. It is very difficult to eradicate fully all the causes of health hazards from a garments industry considering all the circumstances. But the awareness and the root causes of these problems and these severities will affect themselves positively.

This paper (a) will make the workers and also the management aware about the root causes of health hazards and their severity (b) will help to take actions to tackle these causes (c) will work the remedial ways as instruction and direction of the workers and the management.

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