

# DANGERS AND RISK IN THE WORKPLACE

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**Abstract**

*A substantial part of human life span is spent in the workplace. Favorable working conditions demanded from businesses are of great importance both in terms of worker's healty and safety and work efficiency. Although the adverse effects of dangers and risks caused by imporer working conditions are well-acknowledged, a meaningful assessment and control generally haven't been given sufficient significance by businesses, espacially the ones in devoloping countries. The persistence of unhealthy or imporerworking milve expert on adverse influence on worker's healty, safety and efficiency and the enviromental factors that come out in the workplace, cause ailment and distort the welfare.*

**Keywords:** Work healty, work safety, working environment

**1. Introduction**

Today, businesses spend great efforts to maintain and improve their existence in this heavy competition environment. Working conditions are of great importance in terms of both work health and safety and efficiency. Worker's health and safety , total systematic an scientific studies conducted to protect workers and third parties from harmful conditions to health and safety caused by various factors (phiyical, chemical, biological, mechanical, ergonomical, psycosocial, .. and soon) while performing the work in workpalces, comes forth [15].

Today in modern world, work accident and worker's health issues have increasing reached a worrying level and this causes the loss of human force and efficiency. Due to harsh working conditions and too long working hours a decline in motivation and efficiency are observed among workers. In addition, it is also observed that unhealthy, working conditions effect the respiration circulation, muscle and nerve systems, energy metabolism and morale of the workers [13].

## **2. Working conditions and working place**

It took a long time to absolutely understand the close relation between efficiency and working conditions. The first step towards this was taken to grasp that work accidents have both physical and economical impacts. Initially, direct costs such as treatment and compensation were taken into account but later occupational diseases came to gain importance and at last it was admitted that indirect costs were higher in some cases even four times higher than direct costs [1]. Harsh working conditions, fatigue caused by improper lighting and ventilation and too long working hours lead to decline in efficiency and refusal of the product and thus an increase in extravagance rates. It can be said that despite great adaptation ability of humans, a worker can be more efficient in proper working conditions.

In fact, making working environment healthy and safe in any kind of work place requires great discipline and complex approaches. Therefore, it is necessary for all working conditions (lighting, ventilation, loud, vibration, heat, humidity, particles and toxic factors and soon ) to be analyzed and necessary precautions must be taken in order for workers to possess sufficient and safe working environments. Working conditions are of considerable importance in achieving an efficient performance in business [11].

### **2.1. Thermal comfort (temperature, humidity, air movement, ventilation)**

Internal air quality in working environment is directly related to human health and efficiency. So providing thermal comfort for workers who spend at least 8 hours at work is extremely crucial [17]. Excessive heat in work place is known to cause a decline in organic resistance in work efficiency, cramps and heat stroke. If the heat is above normal level, weariness, irritation, recklessness, frequent failures, inefficiency in mental jobs, a decline in ability and skills, an increase in work accidents, inefficiency in heavy physical jobs, disturbance of acid-salt balance, difficulty in blood circulation and tiredness may come out [13].

Lower heat in the work place decreases body temperature thus the affected fingers lose their ability to function properly and their touching senses, causing work efficiency to drop and increasing work accidents [5].

The amount of humidity is another factor that determines heat comfort. Humid and hot weather above normal level is disturbing for the workers. On the other hand if it is below normal level, it causes dryness in the nose, eyes and mouth [7].

In order for workers to work efficiently, ambient temperature must be appropriate for human health. Although it differs from person to person in terms of reaction to heat and durability, the performance of the workers starts to decline at 27°C or so [12].

Ventilation systems in any kind of work place must be improved so as to reach proper heat and humidity. Ventilation is necessary to meet the needs of cooling and fresh air, to scatter the heat coming from working machines and people, to relieve air pollution and to lower the harmful particles spread to the air [16].

### **2.2. Lighting**

It is assumed that 80% of the required information for performing a task is acquired by seeing ability. Well-visibility of machinery, product and other related elements is an indispensable factor to accelerate the production, to decrease the rate of defected products and to prevent visual tiredness and headaches of the workers [1].

Sufficient and satisfying lighting must be provided in order for workers to feel comfortable and to work more willingly. The structural Project of a work place must be planned based on making use of sun to the greatest extent. In locations where sunlight is inadequate, half-indirect lighting method must be applied instead of direct lighting and lighting must be done with the lights shining like sun-light [6].

### **2.3. Loudness**

Increased number of machines and lack of detailed information regarding the disrupting effects of loudness in many work places result in working in too noisy environment.

Distorting psychological and physical health of the workers, loudness adversely affects work efficiency. Loudness has psychological, physical and physiological effects on human health [8].

In places where the severity of loudness is too high, oral communication can't be performed precisely so the possibility of failure increases. Therefore, total work time extends, quality decreases and work accident increase [18].

In order to annihilate the effects of loudness on human health and work efficiency, some precautions such as terminating the loudness in its source, preventing the spread of the loudness and using individual protective devices. Could be taken [9].

### **2.4. Vibration**

Vibration is regarded as systematical movement of a device. As the power of the machines that are used increases, their vibration becomes more disturbing. The disruptive effects of vibration on workers gains muscle with the direction, frequency, time and severity of vibration. Drawbacks for health can be prevented by efficient precautions which will be applied in necessary amount both terms of technical aspects and organizational aspects.

Vibration enters into human body in many ways. It enters through the feet if the person is standing, through the boot if he/she is sitting or through the back if he/she is leaning back. Vibration exists in transportation vehicles and near vibrant machines and huge [2].

In order to protect workers from detrimental effects of vibration, handles of manual devices must be covered with isolation substances such as rubber and plastics. In addition, workers must be made to use special protective gloves. Also, revs per minute must be reduced and damper must be used [9].

### **2.5. Dust**

Dust is a hazardous factor that leads to many disadvantages for workers health in industry. This problem causes many workers to get affliction, especially in developing nations, and leads to loss of work force and a considerable amount of death in workplace. The initial effects of dust related illnesses are loss of work force and endangering normal life conditions in deteriorated circumstances. In aggravated cases, even choking can make one out of breath. Many dust-related illnesses worsen in long term. Even when the worker afflicted with the dust is removed from dusty environment, it can have lasting hazards on him or her [14].

The first step to be taken is to reduce the dust concentration in the air to a level which is not harmful. Furthermore, workers affliction with detrimental substances and dust must be prevented by making the workers wear mask, gloves, protective goggles and protective clothes [10].

## **2.6. Prevention of fires and protection**

The issue of fire protection is of great importance in hot and dry nation and in industries where the fires can cause substantial money loss and even accidents and death if it occurs in working hours [16].

The main causes of fires can be unsafe smoking and lighting, the wrong use of electricity, electrical contact malfunctions in heating system substances heating automatically, improper conditions for storing paints and other flammable materials and compiled dust and rubbish [16].

The main principle in prevention of tires is to desing and onstruct the work places sufficietnly isolated to endure the fires and in a way to be able to prevent the hazards in case of fire. The second principle is to maket he workers acquire the knowtledge of the fire prevention [1].

## **2.7. Cleaning and maintanence**

Unless factories and workshops are kept clean and neat constructing them in accordance with the safety and health procedures is not adequate. Maintanence in a factory or in a workshop means order and general repair these can both contribute to prevention of accidents and increase efficiency.

Cleaning is important in protecting workers against infections and various disorders. Precuations must be taken to terminate the rodentia insects and other pests that cause if any epidemic diseases. This kind of problems, in fact, can be easily preveted by keeping the workshops, comidors and stairs clean. Rubbish cans mustn't leak, must be easily cleaned and be kept clean [1].

Another factor that effects human health is to provide the workers with clean drinking water which must be approved and supervised by health officials [3].

## **2.8. Colour use**

The psycological effect of colours issued in work place can't be overlooked. When the time of repainting the workshops and effices comes, choosing favourable colours instead of disruptive ones will cost no additional expense. Workers appreciate the efforts of emloyers to make the place more appropriate

## **2.9. Work place**

Work buildings must be designed in accordance with the type of work done. Work place must be above the ground where possible and windows of the building must be in width of no less than 17 % of floor space. The lowest ceiling height must be no less than 3 meters. The work place must be planned in a way that allows at least 10 m<sup>3</sup> of air per worker. And in order to prevent accidents, a free space of at least 2 m<sup>2</sup> for per worker must be provided. Walls and ceilings must be covered fort he purpose of prevnting pollution and humidification, and, if necessary, of decreasing the loudness. Floor covering must possess nonslippery, nondustry and easy to clean features. And the best electrical and hesat isolation must be provided wherever necessary [1].

## **2.10. Pressure**

Rapid pressure change adversely effects the health. High pressure is mostly seen in drivers and undersea workers. Low pressure may trigger some disorders in mountain workers and plane staff. Some of these disorders are directly linked to low air pressure, where as some are related to the decrease in oxygen levels [2].

### **3. Result**

The application of an efficient work health and safety education in work place can increase workers efficiency, can reduce work accident and occupational diseases, and can improve the relationship between employers and employees. Healty and safe work places must be provided and extended as a culture in order to prevent work accidents and occupational diseases in our country. The biggest aim of the business is without doubt workers health, efficiency and quality.

Providind a healty and safe environment for workers has positive effects on workers health and safety as well as on work efficiency.

When a well-suited working environment is provided, work accidents and occupational diseases will become less due to ergonomical work conditions. The workers will get less tired and thus product quality and quantity will increase and finally desirable efficiency will be acquired.

Risk evolution is a process that requires constant superising fort his reason, the basic principles of risk evaluation must be taught to employers and employees. Therefore, self -check mechanism which aims at improving work health and safety conditions in work place can be established.

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