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## A Study On Employees Health And Safety In Manufacturing Industry

Raghul Rao. R

PGDM Student, Rajalakshmi School of Business, Chennai

Mageshwaran M

PGDM Student, Rajalakshmi School of Business, Chennai

Dr. Deepika R

Assistant Professor, Rajalakshmi School of Business, Chennai

### Abstract

Companies cannot expect safe working environment right from the inception. But it must be created with great care. Many companies which are less concerned about the health and safety of the employees can cause workplace accidents and health problems to the employees. Accidents are undesirable and unpredictable when they occur, but they can be anticipated. Creation of safety conditions from the possibilities of accidents facilitates the performance of the company. This study aims at providing information about the various causes of accidents in a firm and preventive measures, components of safety measures and health, safety training for employees and workplace health hazards: problems and remedies.

**Keywords:** health, safety, employees, manufacturing, industry

### Introduction

The origin of the concept of workplace safety can be traced back to labor movement during the Industrial Revolution in Europe in the 18th century. During this revolution, unions of workers were formed to work towards the welfare of workers. Workers began to demand better working conditions. Workplace safety is a composite field related to safety, health and welfare of people at Workplace safety includes employee awareness related to the knowledge of basic safety, workplace hazards, risks relating to hazards, implementation of hazard preventions, and putting into practice necessary safer methods, techniques, process, and safety culture in the workplace. It also includes safety rules and regulations designed mostly on the basis of existing government policies. Health and Safety plays vital part in our personal and work life and the environment around us. The awareness of health and safety is important for us in order to perform our day-to-day activities at work and life. The purpose of health and safety is to give us knowledge of the up-to-date health and safety laws and regulations in place and all approved methods and action plans coming from them.

Health and safety plan or program has to be definite plan of action designed to prevent accidents and occupational hazard and diseases and it must include the elements required by the health and safety regulations and legislations as a minimum. The main objectives are to provide information, training, instruction, supervision and ensure staff are aware of instructions provided by manufacturers and suppliers of equipment. The purpose of health and safety is to give us knowledge of the up-to-date health and safety laws and regulations in place and all approved methods and action plans coming from them. Main objectives are to provide information, training, instruction, supervision and ensure staff are aware of instructions provided by manufacturers and suppliers of equipment. provide a safe place of employment. provide a safe working environment. provide a written safety policy/risk assessment. Health and Safety at work is important because it protects the wellbeing of employers, employees, visitors and customers. Looking after Health and Safety makes good business sense.

## Review of Literature

According to Iraj Mohammadfam (2017), Employee Health and Safety Assessment Series 18001-certified companies have a better level of occupational health and safety; this supports the argument that Occupational Health and Safety Management Systems play an important strategic role in health and safety in the workplace. Fabius, Raymond MD (2021) says that, Employers, fund managers, and fund investors would be well served by including strategies that assess a company's commitment to the health, safety, and well-being of their workforce when evaluating investments in their enterprise and portfolios.

Gen Handley (2021) states that, Safety and productivity are two important pieces of a bigger puzzle that encompasses a prolific and happy team who will produce better work as a result. While it might not happen overnight, by focusing on these four areas, you can empower and engage workers to constantly improve workplace safety and simultaneously increase their productivity. Emilio Passetti (2020) says in his article, not all the health and safety control mechanisms positively influence the integration of health and safety issues into business practices and external stakeholder relations. Complementarity between health and safety control mechanisms is significant only for higher health and safety performance companies, indicating that the health and safety control mechanisms operate as a package.

Giovanni Costa (2010) mentioned in his article, shift work interferences on health and well-being are complex and multifaceted in their origins and time manifestations, dealing with several aspects of personal characteristics, and working and living conditions. It was stated by Jeehee Min (2019), To cope with the emerging OHS issues in the fourth industrial revolution era, we need to establish new concepts of 'decent work', and standardized regulations which apply to enterprises in each country, to develop public health as an OHS service, surveil emerging OHS events and networks among independent workers, and nurture experts to be responsible for new OHS issues.

Yangho Kim (2016) mentions in his article, to promote a prevention culture, actions are needed at both the workplace and national levels. The workplace level requires technological improvements, such as engineering controls, compliance with regulations, and introduction of occupational safety and health management systems, as well as managed culture change to achieve a positive safety culture. The national level requires that priority be given to workers' health in the national agenda, and the need for a national approach to workers' health involving the government, thus promoting a prevention culture.

In his article Kwesi Amponsah-Tawiah (2016) shows, Management within the mining sector of Ghana must recognize the fact that workers who feel healthy and safe in the performance of their duties, develop emotional attachment and have a sense of obligation to their organization and are most likely committed to the organization.

The primary focuses of health and safety is to protect employees from accidents, injuries, and exposure to harmful substances in workplace. While accidents cannot be predicted and can happen at any time, it is still the employer's responsibility to ensure that they take steps to reduce the risk of incidents and maintain a safe working environment. Therefore, health and safety must be prioritized for the following reasons:

- Reduced risk or accidents or injuries by identifying and mitigating hazards.
- efficiency and productivity can be improved along with employees well-beingness.
- Improved employee relations and morale (a safer work environment is a less stressful work environment).
- Reduced costs associated with accidents or injuries (healthcare and rehabilitative costs, losses in productivity, impact on employees' well-being).
- Lower insurance premiums resulting from fewer workplace incidents and workers' compensation claims.

### **Components of Employees Health and Safety in Manufacturing Sector:**

- Occupational hazards in manufacturing: Discussion of common occupational hazards such as falls, cuts, burns, chemical exposure, and ergonomic injuries associated with various manufacturing processes.
- Safety management systems: Overview of the essential components of an effective safety management system, including hazard identification, risk assessment, hazard control, training and education, and performance evaluation.
- Safety culture: Discussion of the importance of creating a positive safety culture that encourages employee participation, reporting, and continuous improvement.
- Ergonomics and injury prevention: Discussion of the importance of ergonomic programs in preventing musculoskeletal disorders and other injuries associated with repetitive tasks, awkward postures, and excessive force.
- Chemical safety: Discussion of the importance of chemical safety measures in protecting employees from exposure to hazardous chemicals, including the use of personal protective equipment (PPE) and engineering controls.
- Emergency preparedness and response: Discussion of the importance of emergency preparedness and response plans, including evacuation procedures, fire prevention and protection, and first aid.
- Case studies and best practices: Examples of successful safety programs and best practices implemented in the manufacturing sector.

## Employee Health and Safety Management – Components of Safety Management Programme (in India)

The safety programs should be based on an analysis of accidents or injuries and the factors that cause them. Based on the analysis, necessary steps can be taken to control and prevention of accidents, injuries, losses and damages. A comprehensive safety management programs should include:

- **Safety Organization**

A safety committee should be set up by top management and appoint or nominate some person as a chairman or secretary of the safety committees. As a rule, one full time safety director should be appointed for each 2,000 employees.

- **Good Working Conditions**

The accidents frequency and severity can be controlled by providing safe and proper working conditions, avoid of risks and hazards. All dangerous parts of the machinery in a factory must be adequately fenced. The colour shade can play a very important role in preventing accidents.

- **Safety Educations and Training**

Safety education and training for all levels of management and for employees is a vital ingredient for any successful safety management program. Workers should be educated in safety precautions, rules and advised about the safety devices. Posters, leaflets, bulletins, films and talk are all effective method of safety education of workers. He should also teach the principles of first aid, the need for avoiding active hazards, for taking precautions to prevent the outbreak of a fires, and for protecting eyes.

- **Safety Culture**

Every organization has its own culture, simply described as “the way things are done around”. As a part of industry culture, safety should start, ‘at the top’ from the senior management and pervade the whole organization. Safety is unfortunately seen as a cost item and a necessary evil demanded by law.

- **Worker’s Cooperation**

A knowledge of the attitude of the employees to the safety programs developed for them and the specific measures adopted for that purpose. The cooperation of the workers in accidents preventive measures should be enlisted. When co-operation is offered, they should be advised about the type of cooperation required in a particular event or accident. When the workers cooperate, the management should respond and properly make use of such cooperation.

- **Safety Engineering**

It is necessary to use proper engineering procedures because they can eliminate or minimize work place accidents. The full attention is paid to safety engineering in design, layout and installation. Safety equipment is made available to an employee. The discipline of ergonomics should be used to prevent the outbreak. The movement of materials during all stages of the manufacture of a product should be properly planned to eliminate accidents.

- **Accident Reports and Records**

The accident records should be maintained accurately by safety office or safety director. The Factories Act, 1948 provides that when any accident which causes death or bodily injury by reason of which the injured person is prevented from working for a period of 48 hours or more immediately following the accident takes place in an industry, the manager of factory should notify the inspector of factories.

- **Safety Audit**

It is a useful technique to undertake a systematic critical appraisal of the effectiveness of a company’s safety program. Such a periodic review provides an independent assessment of the correctness of the basic direction as well as identifies the specific areas for action to improve the program. It is a tool for ensuring that the plant operation and maintenance procedures match the design intent and standards.

## Accidents in Manufacturing Sector: Causes and Preventions

Many people assumes that employers economize on safety programs the money they save improves profit, but that's not the case. Poor safety practices raise wages rates, because wages rates are higher on jobs with riskier working condition or other things equal. Therefore, unsafe conditions are the causes of the accidents. They include:

- Improperly guarded equipment
- Defective equipment
- Hazardous procedures around machines or equipment
- Unsafe storage—congestion, overloading
- Improper illumination—glare, insufficient light
- Spills on floors
- Electric hazards like frayed cords
- Working from heights, including ladders and scaffolds

The solution is to identify and eliminate the unsafe conditions. The main purpose of safety standards is to address such mechanical and physical accidents. The company's safety department and its human resource managers and top managers are responsible for identifying unsafe conditions.

### Measures to Prevent Accidents

- **Reducing unsafe:**

Reducing unsafe conditions is the employers first line of defense. Safety engineering should design jobs to remove or reduce physical hazards. Supervisors play an important role by helping to identify and remove potential hazards. Some wearable devices such as motion monitors, can be used to determine the device's usability and ascertain that it won't cause unanticipated safety problems.

- **Job hazard analysis**

Job hazard analysis involves a systematic approach to identify and eliminating such hazards before they cause accidents. Performing a job hazard analysis involves at the situations and asking four questions:

- i) What can go wrong?
- ii) What are the consequences?
- iii) How could it happen?
- iv) What are the other contributing factors?

Job hazard analysis should provide the basis for creating counter measures.

- **Operational safety review**

Operational safety reviews are conducted by agencies to ascertain whether units under their jurisdiction are complying with all the applicable safety law, regulations, order, and rules.

- **Personal protective equipment**

While personal protective equipment reduces the perils of some unsafe conditions, getting employees to wear personal protective equipment is famously difficult. In addition to providing protection, PPE should fit properly; be easy to care for; be flexible and light weight; and be maintained in a clean and reliable fashion.



## Health and Safety Training

- The Safety education for all levels of management personnel and for employees is vital for any successful safety program.
- The goal of safety education is twofold to develop safety consciousness among employees and build up a favorable attitude on their part toward safety measures and precautions and secondly to ensure safe work performance on the part of each employee by developing his skill in the use and operation of safety equipment.
- Training is concerned with providing immediate job knowledge, skills and methods work, and also to give understanding of the hazards he is likely to encounter in the course of his work in particular department or particular job and impressing upon him the need for a prompt report of any personal injury, for an understanding the causes of accidents and how they may be prevented, the importance of good house-keep and handling of materials safety.
- He is also taught the principles of first aid, the need for avoiding machine hazards for taking precautions to prevent the outbreak of a fire, for using hand tools properly and for protect his eyes.

## Conclusion

A safe work environment is a feature of all good companies throughout the world. All employees want assurance of their health, safety and protection. A work environment free from injuries and accidents attracts employees. Employees are more satisfied and productive in such environments. A safe work environment is essential for both employees and employers alike. It is the right of all employees to have safety in their workplace. Workplace health & safety is essential regardless of the size of a company. In conclusion, ensuring the health and safety of employees in the manufacturing sector is crucial for maintaining a productive and sustainable workplace. Implementing proactive safety measures such as risk assessment, hazard control, ergonomic programs, and safety training can prevent workplace injuries and illnesses. A positive safety culture that encourages employee participation in safety initiatives and fosters open communication can also improve overall safety performance. Continuous evaluation and improvement of safety management systems can further enhance the health and safety of employees in the manufacturing sector.

## References

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"Ergonomic Risk Factors in Manufacturing" by J. Steven Moore and M. P. Lohnes. This article examines the ergonomic risk factors associated with various manufacturing tasks and provides guidance on how to identify and mitigate these risks.

"Occupational Health and Safety in the Manufacturing Sector: A Review of the Literature" by J. R. Crawford, S. S. Khursheed, and R. S. Pillai. This review article summarizes the existing literature on occupational health and safety in the manufacturing sector and identifies gaps in current research.

"The Impact of Job Design on Safety in Manufacturing" by M. J. Smith and E. L. Cohen. This paper explores the relationship between job design and safety in manufacturing, and suggests ways in which job design can be optimized to promote safe work practices.

