

## **SYNOPSIS**

### **Title: A STUDY ON OCCUPATIONAL HAZARDS IN HEALTH CARE PROFESSION**

#### **ABSTRACT**

Healthcare personnel working in hospitals and healthcare institutions across the world are more vulnerable to occupational dangers than those working in other fields. Aim: The review aimed to evaluate the current research literature on this topic and highlight different potential hazards healthcare professionals are exposed to. Furthermore, we provided recommendations on how to remove or mitigate such risks. Methodology: Literature search was performed to make an overview, assess the incidence, and highlight on the different risk factors that healthcare professionals may encounter.

## INTRODUCTION:

All occupational fields have their own hazards. There are variety of hazards to which workers may be exposed and which may cause various diseases. By following the proper guidelines and precautions, all occupational hazards can be minimized.

## OCCUPATIONAL ENVIRONMENT:

Occupational environment is meant the sum of external conditions and influences which prevail at the place of the work and which have a bearing on the health of the working population. Basically there are three types of interaction in the working environment:

- Man and physical, chemical and biological agents.
- Man and machine.
- Man and man.

### **Man and physical, chemical and biological agents:**

**Physical agent**-the physical factors in the working environment which may be adverse to health are heat, cold, humidity, air movement, heat radiation, light, noise, vibrations and ionizing radiation. The factors act in different ways on the health and efficiency of the workers, singly or in different combinations. The amount of work and the breathing place, toilet, washing and bathing facilities are also important factor in occupational environment.

**Chemical agents**-these comprises a large number of chemicals, toxic dust and gases which are the potential hazards to the health of the workers. Some chemical agents cause disabling respiratory illnesses, some causes injury to health and deleterious effect on the blood and other organs of the body.

**Biological agents**-the workers may be exposed to viral, rickettsia, bacterial and parasitic agents which may result from close contact with animals or their products, contaminated water, soil or food.

Man and machine:

An industry or factory implies the use of machines driven by power with emphasis on mass production. The unguarded machines, protruding and moving parts, poor installation of the plant, and lack of safety measures are the cause of accidents which is the major problem in industries.

Man and man:

There are numerous psychological factors that operates in the place of work. These are human relationships amongst workers themselves on the one hand, and those in authority over them on the other hand. Examples of psychosocial factors include the type and rhythm of work, work stability, service conditions, job satisfaction, leadership style, security, workers participation, communication, system of payment, welfare conditions, degree of responsibility, trade union activities, incentives and a host of similar other factors, all entering the field of human relationships. In modern occupational health, the emphasis is upon the people, the conditions in which they live and work, their hopes and fears and their attitudes towards their job, their fellow-workers and employers.

## OCCUPATIONAL HAZARDS:

An industrial worker may be exposed to five types of hazards, depending upon his occupation:

- ✚ Physical hazards.
- ✚ Chemical hazards.
- ✚ Biological hazards.
- ✚ Mechanical hazards.
- ✚ Psychosocial hazards.

Physical hazards:

Heat and cold: the common physical hazard in most industries is heat. The direct effects of heat

exposure are burns, heat exhaustion, heat stroke and heat cramps; the indirect effects are decreased efficiency, increased fatigue and enhanced accident rates. Important hazards associated with cold work are chilblains, erythrocytosis, immersion foot, and frostbite as a result of cutaneous vasoconstriction. General hypothermia is not unusual.

**Light:** The acute effects of poor illumination are eye strain, headache, eye pain, lachrymation, congestion around the cornea and fatigue. The chronic effects on health include —miner's nystagmus. Exposure to excessive brightness or —glare is associated with discomfort and annoyance and visual fatigue.

**Noise:** The effects of noise are of two types: auditory effects which consist of temporary or permanent hearing loss and non-auditory effects which consist of nervousness, fatigue, interference with communication by speech, decreased efficiency and annoyance.

**Vibration:** Vibration usually affects the hands and arms. After some months or years of exposure, the fine blood vessels of the fine fingers may become increasingly sensitive to spasm (white fingers). Exposure to vibration may also produce injuries of the joints of the hands, elbows and shoulders.

**Ultraviolet radiation:** occupational exposure to ultraviolet radiation occurs mainly in arc welding. Such radiation mainly affects the eyes, causing intense conjunctivitis and keratitis (Welder's flash). Symptoms are redness of the eyes pain, these usually disappear in a few days with no permanent effect on vision or on the deeper structures of the eyes.

**Ionizing radiation:** ionizing radiation is finding increasing application in medicine and Industry, eg: X- ray and radioactive isotopes. Important radio-isotopes are cobalt 60 and phosphorus 32. Certain tissues such as bone marrow are more sensitive than others and from genetic standpoint, there are special hazards when the gonads are exposed. The radiation hazard comprises genetic changes, malformation, cancer leukaemia, depilation, ulceration, sterility and in extreme cases death. The international commission of radiological protection has set the maximum permissible level of occupational exposure at 5 rem per year to the whole body.

### **Chemical hazards:**

There is hardly any industry which does not make use of chemicals. The chemical hazards are on the increase with the introduction of newer and complex chemicals. Chemical agent acts in three ways: local action, inhalation and ingestion. The ill-effects produced depend upon the duration of exposure, the quantum of exposure and individual susceptibility.

Local action: some chemicals cause dermatitis, eczema, ulcers and even cancer by primary irritant action; some causes dermatitis by an allergic action.

Inhalation: Dusts are produced in a number of industries- mines, foundry, quarry, pottery, textile, wood or stone working industries. The most common dust disease in this country are silicosis and anthracosis.

Gases: Gases are sometimes classified as simple gases(eg; oxygen, hydrogen), asphyxiating gases (e.g. carbon monoxide, cyanide gas, sulphur dioxide, chlorine) and anesthetic gases (eg; chloroform, ether, trichloroethylene) carbon monoxide hazards is frequently reported in the coal-gas manufacturing plants and steel industries.

Metals and their compounds: a large number of metals and compounds are used throughout industry. The chief mode of entry of some of them is by inhalation as dust or fumes. Metals may be of antimony, arsenic, beryllium, cadmium, cobalt, manganese, mercury, phosphorus, chromium, zinc and others.

### **Biological hazards:**

Workers may be exposed to infective and parasitic agent of the place of work. The occupational disease in this category are brucellosis, leptospirosis, anthrax, hydatidosis, psittacosis, tetanus, encephalitis, fungal infections, schistosomiasis and a host of others. Persons working among animal products (eg; hair, wool, hides) and agricultural workers are specially exposed to biological hazards.

Mechanical hazards:

The mechanical hazards in industry centre round machinery, protruding and moving parts and the like. About 10% of accidents in industry are said to be due to mechanical causes.

Psychosocial hazards:

The psychosocial hazards arises from the worker's failure to adapt to the alien psychosocial environment. Frustration, lack of job satisfaction, insecurity, poor human relationship, emotional tension are some of the psychological factors which may undermine both physical and mental health of the workers.

The health effects can be classified in two main categories: psychological and behavioural changes- including hostility, aggressiveness, anxiety, depression, tardiness, alcoholism, drug abuse, sickness, absenteeism. Psychosomatic ill-health: including fatigue, headache, pain in the shoulders, neck and back; propensity to peptic ulcer, hypertension, heart disease and rapid ageing.

## OBJECTIVES

- ❖ To study and analyze the effectiveness of Employee Occupational hazards, Safety and Health at Sai Sanjeevani Hospitals.
- ❖ To trace the causes of accident in the work place.
- ❖ To study to which extent employees are practicing safety and health in the real work situation.
- ❖ To assess the management commitment towards employees safety and health.
- ❖ To suggest suitable measures for improving employees safety and health.

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# **RESEARCH METHODOLOGY**

## **RESEARCH**

Research is a process in which the researcher wishes to find out the end result for a given problem and thus the solution helps in future course of action. The research has been defined as “A careful investigation or enquiry especially through search for new fact in any branch of knowledge”.

## **RESEARCH METHODOLOGY**

The procedure using, which researchers go about their work of describing, explaining and predicting phenomena, is called Methodology. Methods comprise the procedures used for generating, collecting, and evaluating data. Methods are the ways of obtaining information useful for assessing explanation.

## **TYPES OF RESEARCH**

The type of research used in this project is descriptive in nature. Descriptive research is essentially a fact finding related largely to the present, abstracting generations by cross sectional study of the current situation .The descriptive methods are extensively used in the physical and natural science, for instance when physics measures, biology classifies, zoology dissects and geology studies the rock. But its use in social science is more common, as in socio economic surveys and job and activity analysis.

## **DESCRIPTIVE RESEARCH AIMS AT**

- To portray the characteristics of a particular individual situation or group(with or without specific initial hypothesis about the nature of this characteristics).
- To determine the frequency with which something occurs or with which it is associated with something else( usually , but not always ,with a specific initial hypothesis).

The descriptive method has certain limitation; one is that the research may make description itself an end itself.

Research is essentially creative and demands the discovery of facts on order to lead a



solution of the problem. A second limitation is associated whether the statistical techniques dominate. The desire to over emphasis central tendencies and to fact in terms of Average, Correlation, Means and dispersion may not always be either welcome.

This limitation arises because statistics which is partly a descriptive tool of analysis can aid but not always explain casual relation.

### **DESIGN OF DESCRIPTIVE STUDIES:**

Descriptive studies aim at portraying accurately the characteristics of a particular group or solution. One may under take a descriptive study about the work in the factory, health and welfare. A descriptive study may be concerned with the right to strike, capital punishment, prohibition etc.

A descriptive study involves the following steps:

1. Formulating the objectives of the study .
2. Defining the population and selecting the sample .
3. Designing the method of data collection .
4. Analysis of the data .
5. Conclusion and recommendation for further improvement in the practices.

### **RESEARCH DESIGN**

Research design is the specification of the method and procedure for acquiring the information needed to solve the problem.

The research design followed for this research study is descriptive research design where we find a solution to an existing problem. The problem of this study is to find the effectiveness of Employees Safety & Health at Sai Sanjeevani Hospitals.

### **UNIVERSE AND SAMPLING:**

This study was restricted to the blue collar employees. Out of the universe of 369 healthcare professional, a sample of 100 respondents was selected by simple random sampling method. All the opinions expressed herein are the contribution by the respondents only.

## DATA COLLECTION METHOD

Survey method is considered the best method for data collection and the tool used for data collection are Questionnaire. Private individuals, health care professionals. In this method a questionnaire is collected through personal interview. A questionnaire consists of a number of question involves both specific and general question related to Employees Safety & Health.

## SOURCES OF DATA

The two sources of data collection are namely **primary & secondary**.

- **Primary data**

Primary data are fresh data collected through survey from the employees using questionnaire.

- **Secondary data**

Secondary data are collected from books, internet and various journals, magazines etc.

## STATISTICAL TOOLS USED

- PERCENTAGE METHOD

In this project percentage method test and used. The following are the formula

$$\text{Percentage of Respondent} = \frac{\text{No. of Respondent}}{\text{Total no. of Respondent}} \times 100$$

- CHI - SQUARE Analysis

In this project chi- square test was used. This test is used to test significance of association between two attributes. Chi- square, symbolically written as  $\chi^2$  (pronounce as Ki-square), is a statistical measure used in the context of sampling analysis for comparing a variance to a theoretical variance. Formula for finding chi square is

$$\chi^2 = \sum (O-E)^2 / E$$

In this study chi-square is to find the association between respondents gender and respondents accident proneness, respondents accident proneness and enough training for the employees & employees work load and the approach of the organization .

- **CORRELATION ANALYSIS**

Correlation Analysis is a statistical technique used to measure the magnitude of linear relationship between two variables. Correlation Analysis is not used in isolation to describe the relationship between variables. To analyze the relation between two variables, two prominent correlation coefficient are used –the Pearson product correlation coefficient and Spearman’s rank correlation coefficient .

In this study the Pearson product correlation coefficient is used to find the correlation coefficient between respondents awareness level at the time of joining with employees participation in suggestion scheme & respondents awareness level at present and the counseling .

This is also known as simple correlation coefficient and is denoted by “r”.The “r” value ranges from -1, through 0, to +1.It is calculated using the formula

$$r = \frac{\sum xy}{\sqrt{\sum x^2 \cdot \sum y^2}}$$

## **CHAPTERISATION**

**Detailed/final Project Report will include the following chapters**

### **CHAPTER –I**

- Introduction
- Significance of the study
- Need of the study
- Objective and scope of study
- Methodology
- Limitations
- Scope

(Details of methodology used in studying and collecting the data and issue will be described)

### **CHAPTER –II**

- Literature review
- Theoretical study

### **CHAPTER –III**

- Industry & company profile

### **CHAPTER –IV**

#### **Analysis of the topic & Interpretation**

(Descriptive work on the topic, this chapter will include analysis and interpretation of data tabulation and categorization)

### **CHAPTER –V**

- Recommendation
- Bibliography
- Appendix

## **BIBLIOGRAPHY**

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