

# **Work Related Injuries and Occupational Safety in Iraq Occupational Safety in the State Company for Refractories in Baghdad Example**

## **Research Article**

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## **Abstract**

**Background:** An injury is defined as wound or trauma; harm or hurt; or damage inflicted on the human body of the injured by an external force. The injury is a suspected bodily lesion resulting from acute overexposure to energy interacting with the body in amounts or rates that exceed the threshold of physiological tolerance. Occupational accidents cause direct and indirect or hidden costs for the whole society. Global estimates by ILO show that the occupational problems are bigger than earlier believed. Especially, figures of occupational fatal and non-fatal accidents in developing countries were greatly underestimated. The previous international estimations have been based on existing information from industrial countries. The fatality rate and an absolute number of deaths for developing countries were estimated based on regional estimates.

**Objective:** This study was conducted to describe the work-related injuries in Iraq

**Materials and Methods:** This is a cross-sectional qualitative study. This study has described a group of studies related to the topic of work injuries and occupational accidents. The authors reviewed fifteen studies reported in (Medline, WHO Portal, ILO, ELDIS, POPLINE, PubMed) databases that have assessed the work-related injuries and Occupational injuries. Data extracted from eligible studies included work-related injuries and occupational injuries.

**Outcomes:** The results of this study show that there are increased in the number of accidents in years 2000 and 2001, and there was an increase in the average of accidents frequencies in years of 1999 and 2002. This study also found that the highest percentage of accidents were happened in mills department (35%), followed by ovens department with percentage (20%). The highest percentage of accidents was occurred among the workers with the primary level of education, diploma level and tertiary level respectively (37.5%), (10%) and (15%). The most percentage of accidents was occurred in the age group of (26-30%) years, followed by the age group of (31-35%) years.

**Conclusion:** According to the results of this study which have adapted from one study conducted in 2011, the community there needs to conduct more studies about the work related injuries and how prevent it.

**Keywords:** Work-related injuries; Occupational injuries

## Introduction

An injury is defined as wound or trauma; harm or hurt; or damage inflicted on the human body of the injured by an external force [1]. The injury is a suspected bodily lesion resulting from acute overexposure to energy interacting with the body in amounts or rates that exceed the threshold of physiological tolerance [2]. Accident and injury are undesirable results of a production process, and energy interaction is a key element in the occurrence of harm [3]. There are two types of energy exposures lead to the occupational injuries are acute and chronic. Sudden energy transfer causes traumatic injuries to the body of the victim during short duration exposure. Tayyari and Smith, were define cumulative trauma disorders (CTDs) or repetitive strain injuries (RSIs) as injuries caused by chronic exposure to repetitive motions or forceful exertions [4]. Occupational injuries remain a priority for public health in developed countries, although incidence rate trends have been declining in recent years [5,6].

Global estimates by ILO show that the occupational problems are bigger than earlier believed. Especially, figures of occupational fatal and non-fatal accidents in developing countries were greatly underestimated. Also, a recent study from US has shown that between 33% and 69% of all occupational injuries were missed off the reported injuries [7]. Previous international estimates have been based on existing information from industrial countries. The fatality rate and an absolute number of deaths for developing countries were estimated based on regional estimates. However, many studies from different countries have shown that a ratio between fatal and non-fatal accident is quite constant if accurate recording systems exist [8,9].

The difference in accident rates between developed and developing countries is remarkable. While many enterprises in developed countries are taking zero accident policy for their goal, enterprises in developing countries are unable to determine their hazards. Furthermore, nowadays many enterprises operate in different regions and countries, and this often makes accident prevention programs more challenging [10]. Occupational accidents cause direct and indirect or

hidden costs for the whole society. There are many variations of the proportion of the costs, but usually the percentage of indirect costs is much bigger than direct costs. On the other hand, these economic calculations are made in industrialized countries that have established specific compensation and social security systems. Often in developing countries an accident that occurs in the workplace does not cause direct costs [11,12]. Wilson listed the common immediate and root causes of accidents as following [13]:

Immediate causes	
Substandard practices	Substandard conditions
Operating equipment without authority	Inadequate or improper protective equipment
Failing to follow established procedures	Defective tools, equipment, materials
Making safety devices inoperable	Fire and explosion hazards (hidden)
Failing to use personal safety equipment	Poor housekeeping, disorder workplace
Servicing equipment that is in operation	Hazardous environmental conditions
Working while under the influence of alcohol/drugs	Inadequate training, expertise, etc.
Root causes	
Personal factors	Job factors
Inadequate physical/physiological capability	Inadequate leadership/supervision
Inadequate mental/psychological capability	Inadequate engineering
Physical or physiological stress	Inadequate purchasing
Mental or psychological stress	Inadequate maintenance
Lack of knowledge	Inadequate tools and equipment
Lack of skill	Inadequate work standards

Table 1: Common immediate and root causes of incidents as listed by Wilson [13].

In Iraq, occupational injuries or work related injuries are considered very common. That is related of a group of causes [14].

- 1- Behavioral causes related to worker such as:
  - A. Careless of the worker to the safety conditions and losing of focusing during working time.
  - B. Lacking of provisionality and experiences.
  - C. Increasing of worker confidence.
  - D. Wrong deal with machines.
- 2- Causes belong to the work environment.
  - A- Unavailable of isolated materials for machines.
  - B- Using of destroyed equipment and tools.
  - C- Nothingness of arrangement and regulations in the workplace.
  - D- Inadequate of lighting and ventilation in the workplace.
  - E- Exposed to the noise during working time.
  - F- Do not use the personal safety equipment during timework.

## Material and Methods

A cross-sectional qualitative study. This study has described a case study related to the topic of work injuries and occupational accidents. The author have reviewed one study in the study location because lacking studies that have been studied the working related injuries. The researcher was reviewed a group of studies reported in (Medline, WHO Portal, ILO, ELDIS, POPLINE, PubMed) databases that have assessed the work-related injuries and occupational injuries. Data extracted from eligible studies included work-related injuries and occupational injuries.

### Occupational Safety in the State Company for Refractories in Baghdad as example: Al-Kubaisi [15,16].

The work accidents were considered an important problem that has faced the state company for refractories. This study aims to know the most important factors that

have caused work accidents in this company. Studying and analyzing this problem in this company was dependent on studying of (40) accidents case for the period 1998-2002. This research has discussed the nature of work accidents in this company and their year number. Also showed the distribution of work accidents according to departments, type of accident, location Human body, age, and education level. The findings of this study again reveal that there are increased in the number of accidents in years 2000 and 2001. This study also found that there was an increase in the average of accidents frequencies in years of 1999 and 2002. The researcher was concluded that there was a lack of precise of registration of simple accidents; that was very clear because there were only the hard accidents. The researcher was concluded that this study will contribute in establish of the efficient safety program for this company, to help them to prevent of work accidents.

### The Results of this Study

Table 1 reveals that the number of events, number of worker, total number of working hours and frequency of accidents.

Years	Number of events	Number of workers	Total number of working hours	Average of frequencies
1998	6	184	441600	13.5
1999	4	190	456000	8.7
2000	11	264	873600	12.5
2001	10	404	969600	10.3
2002	9	408	979200	9.1

Table 1: The number of events, number of worker, total number of working hours and frequency of accidents.

The results of this table show that there are increased in the number of accidents in years 2000 and 2001. This study also found that there was an increase in the average of accidents frequencies in years of 1999 and 2002. The reason to register these cases is to get the suitable compensation.

Department	Number of accidents	Percentage
Mills	14	35%
Ovens	8	20%
Pressures	4	10%
Electricity	4	10%
Storages	4	10%

Projects	3	7.50%
Maintenance	3	7.50%
Total	40	100%

Table 2: Distribution of accidents according to departments of the company for years 1998-2002.

The findings of this table show that the accidents in mills department were about 35% of total accidents. Ovens department was followed the mills department with percentage 20%; that is because of the highly risks in these departments.

Educational status	Number of accidents	Percentage
Primary level	15	37.50%
Secondary level	4	10%
Tertiary level	6	15%
Diploma	8	20%
Bachelor	3	7.50%
High diploma	4	10%
Total	40	100%

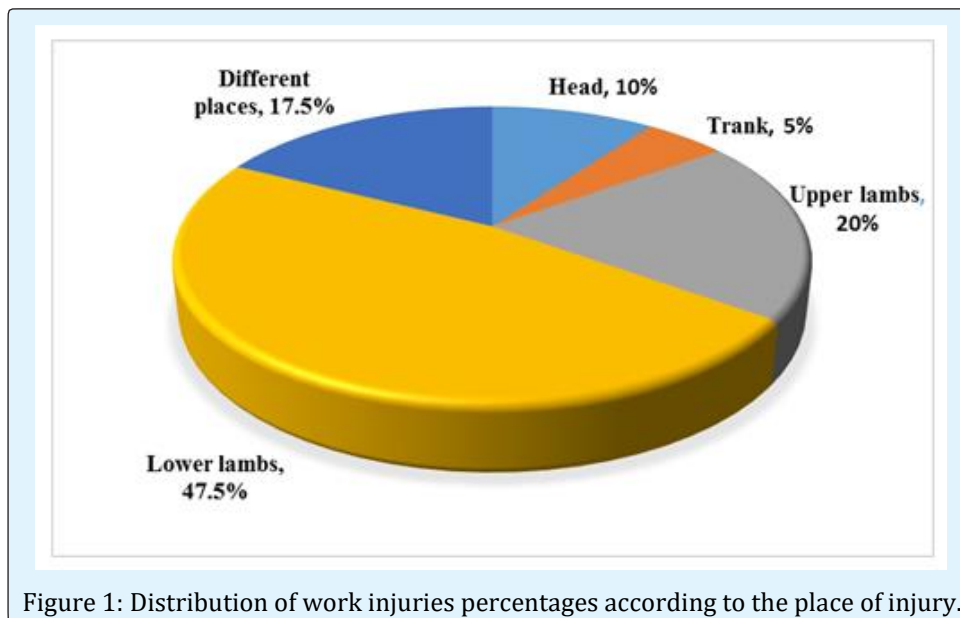
Table 3: Classification of accidents according to the level of education of workers.

The results of this table reveal that the highest percentage of accidents was happened among the workers with the primary level of education. The diploma level of education comes in the second with percentage (20%) followed by tertiary level with percentage 15%.

Age group (years)	Number of accidents	Percentage
26-30	16	40%
31-35	14	35%
36-40	5	12.50%
41-45	3	7.50%
46-50	2	5%
Total	40	100%

Table 4: Classification of accidents according to the age of workers.

The findings of this table show that the most percentage of accidents was happened in the age group of (26-30%) years, followed by the age group of (31-35%) years.



This figure reveals that the highest percentages of work injures were in the lower lambs (47.5%) follow by

upper lambs injures (20%) and the injures in different places in the body (17.5%).

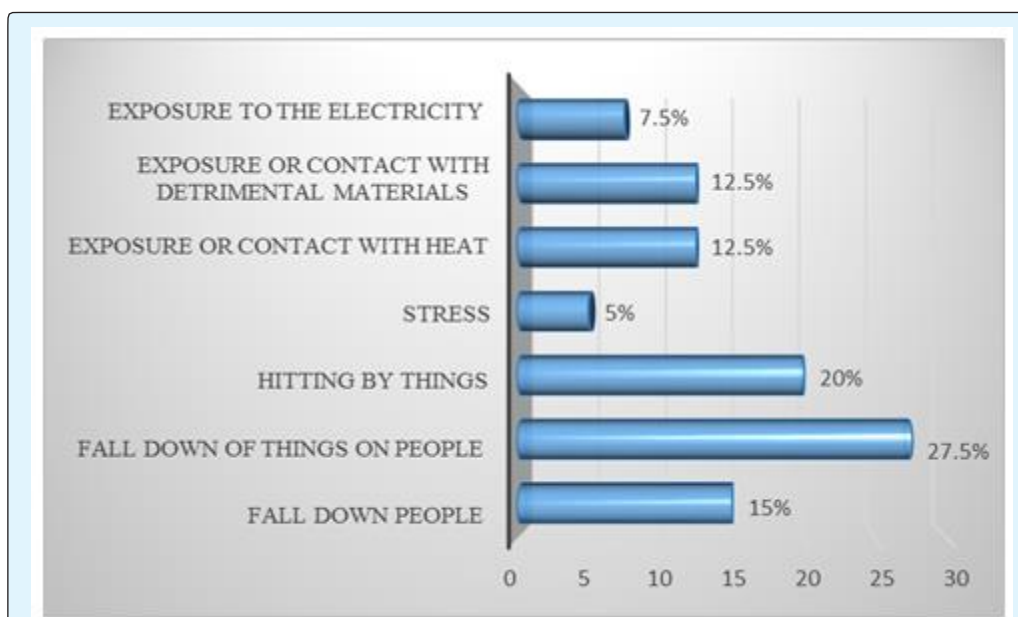


Figure 2: Distribution of respondents according to the causes of work injuries.

This figure shows that the most causes for the work injuries was fall down of things on people (27.5%) followed by hitting by things (20%) and fall down people (15%).

### Conclusion

The results of this study show that there are increased in the number of accidents in years 2000 and 2001, and there was an increase in the average of accidents frequencies in years of 1999 and 2002. This study also found that the highest percentage of accidents were happened in mills department (35%), followed by ovens department with percentage 20%. The largest percentage of accidents was occurrence among the workers with the primary level of education, diploma level, and tertiary level respectively (20%), (15%). The most percentage of accidents was an occurrence in the age group of (26-30%) years, followed by the age group of (31-35%) years.

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