

Awareness Regarding Occupational Hazards Among the Workers of Selected Industries of Biratnagar

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Abstract:-Occupational hazards are of vital risk factors which play role in physical and mental wellbeing of the workers which may subsequently lead into economic crisis if a sole earner of bread and butter in a family is affected. Appropriately 30-50% of workers report exposure to physical, economical, and biological hazards. Equal number of working people report psychological overload at working places which results into stress symptoms. It has been estimated that about 120 m occupational related accidents with 200,000 deaths occur annually. It has also been emphasized that around 68-157 m new cases of occupational diseases are caused by exposure to various factors at working places.

The objective of the study is to assess the awareness regarding occupational hazards among the workers of selected industries of Biratnagar, Morang, Koshi ,Nepal.

Keywords:-Awareness, Industrial Workers, Occupational Hazards, personal protective equipment (PPE), industrial hygiene, workplace.

I. INTRODUCTION

Occupational health is the enhancement of physical, mental and social wellbeing of workers and support for the development and maintenance of their working capacity as well as professional and social development at work.(1). Occupational hazards are substantial risk to workers' physical, mental wellbeing which is present in certain task,job or profession (2).

Working places are always hazardous, the hazard may be from the equipment or may be due to exposure to harmful chemicals or substances .Such exposure to physical, chemical and biological factors are common in many economic sectors. Many workers spend one-third of their productive adult life in such hazardous working environments (3).

A. Occupational Hazards Include

a). Chemical Hazards

Due to CO, CO₂, Nitrogen Dioxide, Sulphur Dioxide,Hydrocarbons, various acids carcinogenic substances like benzidine,arsenic,etc. Exposure to these substances may result into diseases of respiratory system, cardiovascular, skin allergiesneurological disorders, cancer etc.

b).Biological Hazards

Due to exposure to various microorganisms including bacteria,virus,fungi,parasites, insects result into diseases of specific nature.

c).Environmental Hazards

Due to exposure to noise, air and water pollution, heat, radiation and illumination may lead into defect in eyes, genetic disorders, cancer, sterility, hearing loss, nerve injury etc.

d).Psychological Hazards

Job stresses may occur due to various stresses like task and role demands, organizational demands, organizational leadership, lack of group cohesion, intergroup and interpersonal conflicts, life and carrier changes etc. This may lead into emotional disturbances, which in turn lead into fatigue and exhaustion [4].

ILO, International Labor Organization, deals not only with work and work related issues but also with safety of workers, rights of workers and standards of working places. Its goal is to achieve decent working environment that offer freedom, equity, security and human dignity. In Nepal, it is estimated that approximately 20,000 workers suffer from accidents at work places affecting about 200 losses of lives each year. The concept of Occupational Safety and Health, (OSH), is in an initial stage. After the restoration of democracy, the Government of Nepal has started to pay attention to industrial working conditions and environment by enacting and entrancing the New Labor Law (1992) in the constitution (5)

Chapter 5, section 27-32 of the Labor Act 1992, explains the health and safety of workers in working places. The act explains proper disposal of garbage, provision of modern

toilets, supply of adequate safe drinking water, provision of appropriate volume of ventilation, condition of light, temperature and sound, protection from dust, smokes, fumes and other impurities, avoidance of overcrowding and provision of fire extinguishers and first aid box. The act also includes provision of medical checkup for workers at least once a year. It ensures the provision of first aid in an industry with more than 50 workers, academically trained medical person in an industry with more than 400 workers and a medical doctor and a medical assistant if the industry comprises more than thousand employees.

Section 5 of Chapter II of Labor Act restricts to employ any minor or woman unless otherwise prescribed during the hours between 6am and 6 pm. It also limits the working hours to 8 hrs/day or 48 hrs / week. It advocates for weekly holiday with pay and compulsory intervals of rest. It also provides overtime payments and restricts to allow workers for overtime not more than 4 hrs /day without exceeding 20hrs/ week.

The Three Year Plan (2010-2013) has set an objective to create healthy, safe and decent working environment through development of cordial labor relation. The Government of Nepal established the Occupational Safety and Health Project under the Ministry of Labor and Transport Management in 1995 with the prime objective of creating awareness of occupational safety and health among industrial employers, employees and concerned officials of the government and thereby improving the conditions of the work (6).

However, do workers in our country know all these? Are they aware of the Labor Act? Are the employers ready to implement the act in their industries? Can the government enforce the act strictly? Weak regulatory system has resulted to hazardous working environment leading into high risk of poor working conditions followed by higher incidence of occupational diseases and accidents in working places.

In our country approximately 20, 000 workers suffer from accidents and 200 of them lose lives annually. A cross sectional study from the eastern Nepal showed that 90.7% workers were aware of one or more hazards of welding (7). The Government of Nepal has initiated Labor Act but majority of industries do not follow these act and many workers are not aware of the dangerous effects of the working environment (8). Many industries lack occupational health policy and safety measures for the workers. Many workers are still unaware of occupational hazards and the safety measures. So the researcher felt the need of the research to assess the awareness regarding occupational hazards among the factory workers.

II. MATERIALS AND METHODOLOGY

An ethical approval was taken from the Ethical Committee of NMCTH, Biratnagar. Permission to conduct the study was obtained from Chandra Shiva Rice Mill and Aarati Strips pvt limited , Biratnagar,Nepal and finally and informed consent(verbal) was obtained from each participant before including in the study.

Privacy of the information provided by the participants was maintained.

In this study the data were collected from the above mentioned industries from 7.2.2016 to 21.2.2016. A direct interview was taken by the author to assess the awareness regarding the occupational hazards. Questionnaire was developed by review of literature from text books, journal, online resources, newspaper and various publications.

Questionnaires were categorized into two sections: Socio-demographic data and structured questionnaires on awareness regarding occupational hazards,

The awareness regarding occupational hazards was measured in terms of level of awareness of respondents.

Pretesting was done by direct interview schedule on 10 % population

Score: Each correct response was given score-1 and incorrect response as 0. And the scores were compared as below:

- Adequate level of awareness- more than 75%
- Moderate level of awareness 51-75% of score
- Inadequate level of awareness less than 50%

Once the data was collected were entered in excel 2010 (SPSS Version 17.0 analysis). Then the data were checked for accuracy and completeness .The data analysis was done by using descriptive inferential statistics and univariate logistic regression. As a part of descriptive statistics, frequency tables and percentage distribution were used to describe the demographic variables .Range; mean, medium and standard deviation were used to describe the awareness regarding occupational hazards.

Independent t-test, one-way ANOVA test, was used to test positive significance awareness of workers. The p value was calculated and significance level was determined by 95% confidence interval.

III. RESULTS

Table 1: Percentage Distribution of Socio-Demographic Profile of the Respondents

(n=65)

Characteristics	Category	Frequency	Percentage
Age(in years)	20- 25	13	20
	25-30	20	30.8
	30-35	18	27.7
	35-40	14	21.5
	Mean ± SD = 32.97 ± 7456		
Gender	Male	65	100
Marital Status	Married	58	89.2
	Unmarried	7	10.8
Educational Level	Illiterate	13	20
	Literate	1	1.5
	Primary Level Education	35	53.8
	Secondary Level Education	14	21.5
	Higher secondary and above	2	3.1
Religion	Hindu	65	100
Ethnicity	Dalit	7	10.8
	Disadvantaged Janjati	23	35.4
	Disadvantaged non-DalitTerai caste groups	17	26.2
	Religious minorities	2	3.1
	Relatively advantaged Janjati	9	13.8
	Upper caste groups	7	10.8
Residence	Urban	17	26.2
	Rural	48	73.8

Types of family	Nuclear	27	41.5
	Joint	38	58.5
Income per month (in Rs)	5000- 9000	19	29.2
	9000-13000	40	61.5
	13000-17000	5	7.7
	17000-21000	1	1.5
	Mean \pm SD = 11661.54 \pm 3076		
Since how long are you working?	Less than 1 year	6	9.2
	1-3 years	6	9.2
	3-5 years	12	18.5
	More than 5 years	41	63.1
Types of occupation	Steel industry	45	69.2
	Rice industry	20	30.8

The analysis and interpretation of the present study were based on collected data through structured interview schedule questionnaires (n=65)

The Majority of the respondents (27.7%) were between 30-35 years of age and all of them were males.89.2% of the respondents were married and 53.8% had primary level education, among the total number of respondent 96.9% were

Hindu and the remaining were Muslims. Majority of them were disadvantageous Janajati (35.4%).Only 26.6% of them were Urban, dwellers and 58.5% among the subjects lived in the joint family.61.5% of the subject had a monthly income of Rs.9, 000-13,000 and only 1.5% of them had a monthly income of Rs. 17,000-21,000 per month. Many of them (63.1%) of them were working in the industry for more than five years.

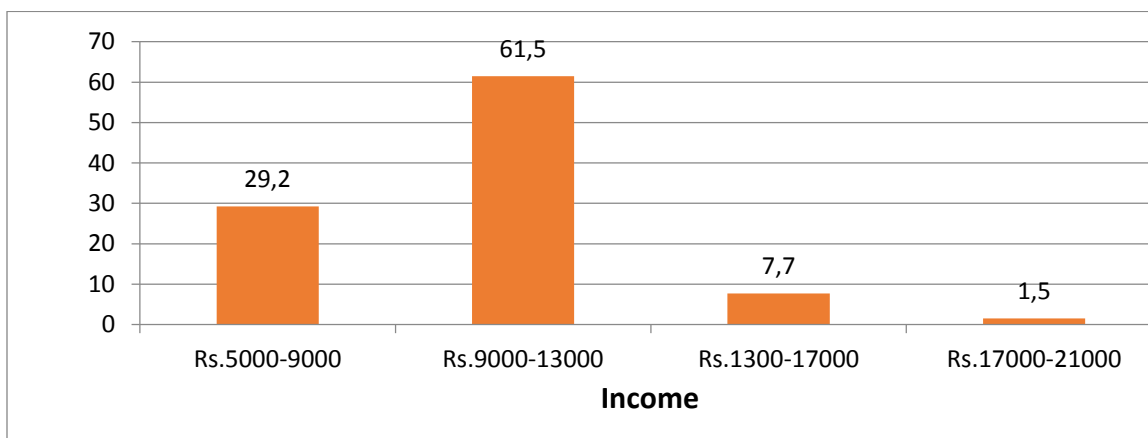


Fig 1: Frequency and Percentage Distribution of Income:(n=65)

The figure 1 depicts that 29.2% earned money between Rs.5000-9000, 61.5% earned between Rs.9000-13000, 7.7% earned between Rs.13000-17000 and 1.5% earned Rs.19000-21000.

Table 2: Awareness of the Respondents Regarding Occupational Hazards According to General Information (n=65)

Characteristics	Responses	Frequency	Percentage
Receive of training for work	No	61	93.8
	Yes	4	6.2
Heard about occupational hazards	Yes	65	100
Definition of occupational hazard (Substantial risk to worker's physical and mental well-being)	Correct response	13	20
	Incorrect response	52	80
Cause of occupational hazard (Inappropriate knowledge regarding machinery use)	Correct response	63	96.9
	Incorrect response	2	3.1
Factor not contributing to stress in the workplace (Appropriate light source in work environment)	Correct response	62	95.4
	Incorrect response	3	4.6
Effect of dust and smoke on your health (Cancer)	Correct response	9	13.8
	Incorrect response	56	86.2

The table shows that only 6.2% of the respondent had received training for their work and surprisingly. It is worthwhile to note that sent percent of them had heard of occupational

hazards. 96.9% of the subjects responded by saying that occupational hazards due to inappropriate knowledge regarding machinery use.

Table 3: Awareness of Respondents Regarding Occupational Injury and Use of PPE

(n=65)

Characteristics	Responses	Frequency	Percentage
Necessity of use of PPE (Yes)	Correct response	65	100
	Incorrect response	0	0
Safety practice to prevent occupational injury and accidents (Safely handling of equipment)	Correct response	53	81.5
	Incorrect response	12	18.5
Necessity of provision of financial support to workers experiencing occupational hazard (Yes)	Correct response	65	100
	Incorrect response	0	0
Necessity of provision of sick leave to workers (Yes)	Correct response	65	100
	Incorrect response	0	0
Staff carrying out physical activities in their job role should have Appropriate training	Correct response	12	18.5
	Incorrect response	53	81.5
Necessity of fire extinguisher in work area (Yes)	Correct response	65	100
	Incorrect response	0	0
Workplace excessive noise may be controlled by Shift work	Correct response	16	24.6
	Incorrect response	49	75.4
Activity to avoid to keep workplace safe (Hide hazards to protect friends' job)	Correct response	65	100
	Incorrect response	0	0
After spotting a hazard, we must Report it to our boss	Correct response	65	100
	Incorrect response	0	0

The above table shows that cent percent of the respondents answered that periodical medical examination must be done. Similarly, all of them answered that industry must have occupational health and safety policy. Again, all of the participants answered that they need to use personal protective

equipment (PPE), industry must provide sick leave and financial supports to its workers and any sort of accidents must be reported to the Boss. In contrary to the above responses, only 18.5% of the respondents said that appropriate training may prevent the occupational hazards,

Table 4: Respondent's Awareness Regarding Labor Act and Given Symbols (n=65)

Characteristics	Responses	Frequency(n=65)	Percentage
Heard about labor act	Yes	9	13.8
	No	56	86.2
Each day, a worker should work 6-8 hours	Correct response	65	100
	Incorrect response	0	0
Given picture indicates No smoking	Correct response	65	100
	Incorrect response	0	0
Given picture indicates No entry	Correct response	48	73.8
	Incorrect response	17	26.2
Given picture indicates Wear ear protection	Correct response	23	35.4
	Incorrect response	42	64.6
Given picture indicates Do not drink	Correct response	11	16.9
	Incorrect response	54	83.1
Given picture indicates Danger, don't enter this workplace	Correct response	60	92.3
	Incorrect response	5	7.7

It is painful to write, in a country well known for exporting its people as labors to various parts of the world, only 13, 8% of the respondents said that they had heard of labor act. All the respondents said that they mustn't work more than 6-8 hours

per day. Similarly 100% of the respondents knew the symbol of no smoking but only 16.9% of them knew the symbol of no drinking. 92.3% respondents knew the Symbol "Danger, do not enter this place." However only 35.4% of the respondents knew the symbol of "Air protection"

Table 5: Mean Percentage and Awareness Score of Responden (n=65)

Awareness	Total attainable score	Minimum	Maximum	Mean \pm SD	Mean % \pm SD
Score	65	14	23	17.52 \pm 1.77	73.01 \pm 7.37

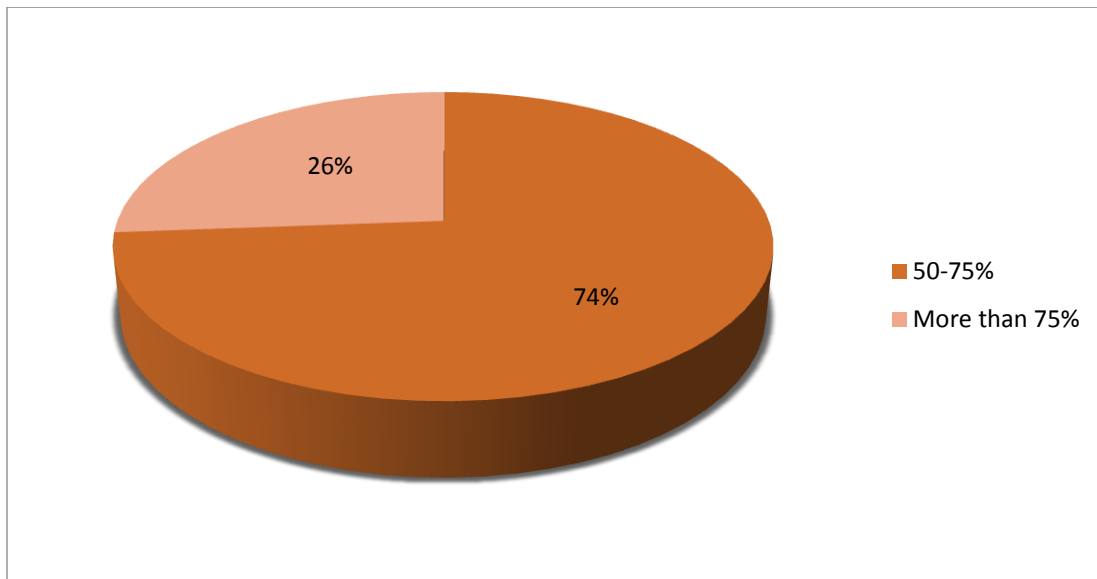


Figure 2: Respondents' Level of Awareness Regarding Occupational Hazards

(n=65)

The figure depicts that the respondents level of awareness regarding occupational hazards where majority of respondents (74%) have moderate level of awareness, 26% have adequate level of awareness and none of the respondents have inadequate level of awareness.

IV. DISCUSSION AND SUMMARY

Occupational Hazard is a serious problem that can arise in any working places. If employee is not aware of the hazards that his working environment can impart upon him not only he would be the suffer but all those who depend on him for each days' bread and butter will face financial crisis. Everyday hundreds of our youth are going foreign lands in the name of foreign employment and many of them return with some sort of deformities due to working place accidents and worse than that some unlucky relatives have to receive dead bodies of their love ones. This sort of accident can be prevented to some extent if Government or the foreign employing agents give some basic training on specific jobs that they are going to do in foreign country. As the study has revealed that only very few workers had the knowledge of machines and the type of job they need to perform and the possible accidents that they can face while handling that particular machine. Use of simple techniques to avoid accidents prevents major accidents from occurring. As for example, placement of fire extinguisher in appropriate place and simple training on how to use fire extinguisher in case if a fire breaks out is beneficial not only for employees but also for employer as it will prevent major accidents from occurring. Just putting a fire extinguisher in a factory and no one knowing how to handle it has no meaning.

The Government of Nepal has made Labor Act in the constitution. Do our labors know the Act? Obviously, many of them might not even have heard what the labor Act is. Isn't it the duty of the government to make its factory –going people to know what the labor act is? All most all employees know that there is labor act also and they also know that if they go against the labor act they are liable to be punished, but many of them show deaf ears towards the act and do whatever is beneficial for them. And more than that, even our workers do not try to follow the Labor Act. As for example constitution has clearly maintained that no child labor entertained introducing in working places whether in household or in factory and no labor should work more than 6-8 hours/day but poverty ridden people put these things aside in order to make hand and mouth to meet.

Many workers know what the occupational hazards are and the consequences of occupational hazards. But question of earning and surviving come before occupational hazards and as a result many labors despite of their knowledge about the occupational hazard put their live in risk and plunge for working. So in a poverty filled country like ours, talking about occupational hazards and labor acts are useless. First of all the country must upgrade the economic status of its people and then it will be possible to implement labor acts and talk about occupational hazards. If it is pointless to prevent a child of less than 15 years of age from going to factory to earn money, if he does not have any other means to survive. Does our government have any compensatory mechanisms? Obviously not. If a police chases away child laborers from a kiln factory

many of them will die from hunger or some opt for other means of surviving like begging or pick-pocketing. So, let's abolish poverty, raise the living standard of people living below the line of poverty, then we can table the discussion about the implementation of labor act and occupational hazards.

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