Original Research Article

ANALYSIS OF PROTECTIVE MEASURES FOR WORKERS AT VITAL TEA FACTORY TEHSIL HAROONABAD DISTRICT BAHAWALNAGAR-PAKISTAN

ABSTRACT

Tea is used almost all over the world and is brewed from the tea plant *Camellia sinensis*. Manufacturing of tea involves several labor intensive processes. The main risks posed are from unguarded machinery, chemical, and biological agents as well as unfavorable working conditions like high temperatures. This research study is an attempt to examine the preventive and protective measures relating to health and safety of the workers adopted at Vital Tea Factory of Tehsil Haroonabad, District Bahawalnagar.

Objectives of study: To assess the preventive measures adopted for the workers and to make recommendations for their better occupational safety.

Material & Methods: It was a cross-sectional descriptive study.

Results: Results showed that the mean age of workers was 31.22 ± 8.55 SD years. The educational status showed that all of the respondents were literate. Stress at work was seen in 11 (17.2%) workers. Among all respondents, 37 (57.8%) were using face masks and gloves while 25 (39.1%) were using only face masks. Only one person was using ear plugs.

Conclusion and Recommendations: Generally, the workers were not taking adequate measures to prevent themselves from occupational hazards. Hence, there is an urgent need to look into the matters by the management to improve the working conditions.

Key Words: Preventive Measures, Tea Factory Workers. Risk Management**.**

1. INTRODUCTION

Tea is an indispensable beverage used the world over and is brewed from the tea plant *Camellia sinensis*. Manufacture of tea involves several labor intensive processes. Like in any other employment sector, workers in the tea factories run an equal if not higher risk of being injured as a result of the type of work they do. The main risks posed are from unguarded machinery in the factory, chemical, and biological agents as well as unfavorable working conditions like high temperatures. [1] The tea industry faces challenges in ensuring occupational safety and health because of the management's mindset of accepting safety as a liability to the business and the lack of safety awareness amongst the workers. Inhalation of tea dust is known to give rise to both acute and chronic respiratory symptoms. Accidents are caused by the result of unsafe acts or practices. They are also caused by the result of unsafe conditions of equipment or

materials. [3] The health and safety of all employees is closely linked to the company's productivity in all workplaces. At some tea processing factories, attention is mainly on negative outcomes. As long as there are no serious accidents, occupational health and safety policies and practices are not carried out fully. As a result, threats to employees' safety are not eliminated in time because accident-prone areas are not recognized and taken care of before accidents occur. It is therefore important that the conditions that pose threat to the safety and health of the workers are identified and addressed. [4]

Workplace safety and health has a great influence on the productivity of the entire manufacturing activity. For a labor intensive industry like tea, where the laborers are illiterate, unskilled and malnourished and also which is striving for enhancement of productivity, safety and health of workers need to be paid special attention. Though the tea industry is not categorized as a major accident hazard in Pakistan, it poses a significant safety and health hazard to its workers. So, a comprehensive and quantitative measurement approach reflecting the true picture of the safety and health status of the tea industry is necessary.[7]

Workplace safety and health has a great influence on the productivity of the entire manufacturing activity. For a labor intensive industry like tea, where the laborers are illiterate, unskilled and malnourished and also which is striving for enhancement of productivity, safety and health of workers need to be paid special attention. Workers in the tea planting industry are exposed to a variety of occupational health and safety hazards. The main risks posed by workers at tea factories are from unguarded machinery, chemical and biological agents as well as unfavorable working conditions like high temperatures. A lot of studies have been done on the occupational hazards for employees related to tea industry at international levels. However, no study so far has been done on preventive measures related to workers in a tea industry in Pakistan, so this study is designed to collect information regarding preventive measures, in order to develop strategies to be adopted for improving occupational safety, for better working environment and services provided to tea factory workers.

1.1.Objective of study

The objectives of the study are to:

- Assess the preventive measures adopted for the workers working at Vital Tea Factory.
- Make recommendations for better occupational safety and health measures for workers of factory.

2.MATERIAL & METHODS

2.1 STUDY DESIGN

It was a cross-sectional descriptive study.

2.2 PLACE OF STUDY

The place of study wasVital Tea Factory, Haroonabad, District Bahawalnagar.

2.3 STUDY POPULATION

Factory workers of Vital Tea Factory, Haroonabad, District Bahawalnagar.

2.4 SAMPLINGTECHNIQUE

Simple Random Sampling

2.5 SAMPLE SIZE

The sample size is 60.

2.6 DURATION OF STUDY

The duration of study was one month from

2.7 DATA COLLECTION

A semi -structured questionnaire was prepared and finalized after pre testing.

2.8 DATA ANALYSIS

Data was entered in computer software SPSS version

3.**RESULTS**

The mean age of respondents was 31.22 ± 8.55 SD years. The minimum age recorded was 20 years and maximum was 51 years, the mean education was 7.41 ± 2.3 SD years. The minimum education recorded was 5 years and maximum was 14 years, the mean job duration was 11.27 ± 5.46 SD years. The minimum job duration recorded was 3 years and maximum recorded was 25 years whereas the mean overtime working hours were2.92 ± 1.0 SD hours. The minimum overtime working hours were 2 hours and maximum was 6 hours.14 (21.9%) were frequently absent from duty while 50 (78.1%) were most of the time present on duty.

Out of 14 absent from duty, 8 (57.1%) said that reason was children issues, 5 (35.7%) said that the reason was their sickness and 1 (7.2%) said that the reason was their parents' problems. 8 (12.5%) suffered from work related disease and 55 (87.5%) were healthy.Out of 8 respondents who suffered from work related diseases, 2 (25%) thought that disease was worsened due to job and 6 (75%) thought that no effect was due to job. 40 (62.5%) respondents developed health problems and 24 (37.5%) did not develop any health problem since employed. Out of total 64 respondents, 11 (17.2%) felt stress while 53 (82.8%) respondents did not feel stress.

Table 1 Frequency Distribution of Respondents who Sustained Accidental Injury

Sustained Accidental Injury	**Frequency**	**Percentage**
Yes	4	6.2
No	60	93.8
Total	**64**	**100**
Type of Accidental Injury	**Frequency**	**Percentage**
Finger Cut	3	75

Laceration to Finger	1	25
Total	**4**	**100**

Table 2 Frequency Distribution of Respondents Adopting Preventive Measures

Against Tea Dust	**Frequency**	**Percentage**
Face Mask	25	39.1
Face Mask & Gloves	37	57.8
No Prevention	2	3.1
Against Noise	**Frequency**	**Percentage**
Ear Plugs	1	1.6
No Prevention	63	98.4
Against Humidity and Increased Temperature	**Frequency**	**Percentage**
Covering of Body Parts	63	98.4
No Prevention	1	1.6

4. DISCUSSION

Tea industry has been the most neglected part in terms of policies and procedures to improve health and safety of workers. Tea workers are exposed to a variety of health and safety hazards like respiratory problems because of tea dust, headache and vertigo due to intolerable noise, eye sight problems due to inadequate light, and injuries due to unguarded machinery and unfavorable working conditions like high temperatures and humidity levels.

This study was conducted to assess the preventive measures those were taken by the workers and authorities to protect against the health and safety hazards to which the tea factory workers were exposed.

The mean age reported was 31.22 ± 8.55 SD years. The educational status showed that all of the respondents were literate. This might be due to the company's policy of recruiting a worker who had studied at least to primary level. The mean job duration was 11.27± 5.46 SD years. That shows workers commitment to their work as well as better working conditions.

In this study, amongst the respondents, 44 (68.7%) were workers and 10 (15.6%) were machine operators. Tea workers, like any other industrial workers are prone to diseases as well as accidents due to poor working conditions. In this study, 8 (12.5%) were suffering from work related diseases and their disease was worsened in 2 (25%) workers. Only 4 (6.2%) sustained accidental injuries. Among them, finger cut was seen in 3 respondents and one sustained laceration to finger. Stress at work was seen in 11(17.2%) of the workers.

Wearing proper uniform during working hours protects the workers from many physical as well as biochemical hazards. In this study 50 (78.1%) respondents were wearing proper uniform while working.

Use of personal protective equipment protects the workers from physical, chemical and biological hazards. 37 (57.8%) were using face masks and gloves while 25 (39.1%) were using only face masks to prevent themselves from hazards produced by tea dust. Unfortunately, only one worker was using ear plugs while the remaining were unaware of noise hazards. Most of the workers i.e. 63 (98.4%) were aware of high temperatures and humidity effects so they covered their body parts to avoid such hazards.

All basic facilities like adequate lighting, fencing around machines, ventilated rooms, food and catering and proper sanitation were provided. These reflect healthy signs for adoption of adequate preventive measures against occupational hazards.

5. CONCLUSIONS

In the present study, the workers were using no or less curative measures to prevent themselves from occupational hazards like tea dust, noise from machines and high or low humidity and temperatures. Hence, there is an urgent need to look into the matters by the concerned authority to improve the working conditions. Health education was also not given regarding the personal protection measures as well as there is dire need to reinforce it in the form of regular education programs and legislative laws. Keeping in view the hazards of tea dust it is advisable, therefore the tea factory management, their workers and health officials should work together to adopt technical preventive measures such as well-ventilated work areas and workers should wear appropriate apparel, mask, safety goggles, gloves and ear plugs. These measures would help to identify susceptible workers in due time and improve the technical preventive measures that will decrease the risk of occupational hazards in the factory workers.

7.RECOMMENDATIONS

A few recommendations for improving health and safety conditions for the tea factory workers are as under:

1. Income of both permanent and temporary workers should be increased so that they can lead comfortable and hygienic lifestyles and invest more in health and education.
2. The tea factory workers should be made aware of the importance of the health benefits of drinking clean and safe water, keeping their surroundings clean and free from dirt and stagnant water. The walls and machinery of the tea factory should be kept clean, machines should be fenced off and the floors, stairs and means of access should be of sound construction.
3. Proper training regarding personal protective equipment should be given to workers before operating the factory machines.
4. Protective equipments such as goggles or face shields, chemical-resistant gloves, aprons, ear plugs and respirators should be provided to the workers.

5. Rotation of duties can be undertaken to minimize the ill-effects to the workers.
6. Rehabilitation of sick and disabled tea workers should also be taken care of by the management of the tea factories.

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