

Occupational Health Hazard among the Tea Garden Workers- A Study in a District Of Upper Assam

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Abstract

A healthy occupational environment is important for the wellbeing being of the working society. Occupational Health Hazards refer to the risks or negative impact to the health as well as safety and security at work place. The workers in tea plantation have to perform different types of works in different settings and confront physical. Chemical, biological, mechanical hazards etc. women are more vulnerable to these types of works. Therefore, a study has been conducted among the garden workers of Sessa Tea Estate of Dibrugarh District, Assam in order to identify the potential risks and different types of occupational health hazards faced by the tea garden workers at workplace. For this, primary data have been collected from 280 workers of either sex through sampling method.

Key Words: Occupation, Heath, Hazard, Workers. Tea garden,

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I. INTRODUCTION

Occupational health hazard refers to the potential risks to health and safety and security of workers in the environment of workplaces.¹ Health hazards are physical, chemical, mechanical, biological or psychological factors in the environment which can have negative impacts on human health either short or long term. Workers can expose to hazardous factors through touch, inhalation, ingestion or by direct contact due to lack of safety measures. The tea garden workers are more vulnerable to occupational health hazards as they are mainly engaged in the work-field work as well as factory workers. Women workers are mainly engaged in tea leaf plucking as women worker are treated more expert in plucking and the men workers are engaged with spraying, cleaning, digging, hoeing, chopping along with plucking.

In the tea gardens, the tea leaf plucking is difficult and hazardous task as the workers have to work on their bare feet for hours after hours. Insect bite, leech bite, snake bite are common biological hazard during field works. Cut injury and abrasion are seen during chopping, hoeing and digging. Weight lifting and carrying tea leaves bag causes low back pain problem while there are also risk of accidents and other problem like sprain can occur due to uneven terrain and steep slopes with a harsh weather condition (hot, cold, wet). Tea garden workers are more vulnerable to expose chemical like pesticides, manure used in Tea Garden. Machinery injury can occur during factory work. Moreover, Workers are also exposed to sound pollution and vibration during factory work. Degenerative changes in the cervical spine have been reported due to carrying tea baskets over the head. Continuous plucking also causes painful abrasions to the hands. Wearing hand gloves may not be practically possible during hot and humid weather, and it also involves high cost.

A good working environment is very important for a worker. There are many health hazards related to working environment.² In the United States, the National Institute for Occupational Safety and Health (NIOSH) conduct workplace investigations and research addressing workplace health and safety hazards resulting in guidelines.³ Adequate safety measures, adequate instrument, non-polluted air, sufficient light or sunlight, safe drinking water facility, sanitation facility, first aid treatment facility at workplace etc are essential ingredients for a worker. But where female workers are engaged along with male workers there should be some special facilities like separate sanitary facility, breast feeding area etc. with the workplace environment.

In tea plantation, occupational health hazard may be categorised into following types-

1. **Physical health Hazards**-Occupational safety and health (OSH) refers Physical hazards is the potential risks that can cause physical harm or injury to workers due to physical agents, factors or conditions present in the workplace. Physical hazard is the feeling of inconvenience in the work environment due to exposure of excessive heat, cold, sunlight, rain, noise, vibration etc. Unprotected exposure to sun's ultraviolet (UV) rays can cause

damage to the skin, eyes and immune system of the body. Sunburn, early development of cataract is the common problem due to excessive exposure of sunlight. Excessive cold can also lead to several cold-related illnesses like hypothermia, frost bite, etc.⁴ Each year in United State, twenty-two million workers are exposed to noise levels that could potentially harm their health.⁴ Hearing loss is the most common occupational illness in the manufacturing sector due to development of high decibel sound.⁵

2. **Mechanical hazards** - Mechanical hazard factors include just about anything inorganic that can move or cause injure. These are tools, machines, vehicles, high steps or stairs, uneven slippery road etc. related to workplace. The tea garden workers are mostly suffered from sprain, backache and other Musculo skeletal problems at workplace. Cuts, abrasion, bruises, abrasion, fracture etc are also occur at worlplace.

3. **Biological hazards** - It means biological substances that poses a threat or harmful to human health. Tea garden workers are mainly engaged in outdoor works where they are exposed to biological agents. In tea garden many injuries are caused by the biological beings like snake bite, insects bites, fungus infection, leech bite, mosquito bite etc.

4. **Chemical hazards** - Chemical hazard is a serious health hazard of tea garden workers. There are many agrochemicals use in tea garden to improve the productivity. There are many classifications of hazardous chemicals, including neurotoxins, immune agents, dermatologic agents, carcinogens, reproductive toxins, systemic toxins, asthmagens, pneumoconiotic agents and sensitizers.⁶ These can be corrosive or toxic substances like insecticide, fertilizer, dye etc. which are hazardous to human health. The corrosive substances can cause severe skin burn and damage to tissue contacted with. Some chemical can cause respiratory problem. Insecticides can cause severe poisoning and organophosphorus poisoning is commonly seen in tea garden. Therefore protective measures are very important during work.

5. **Psycho-social health hazards** - Psychosocial health is very important for a tea garden worker as it is influenced by the overall occupational health status. It is the imbalance between the demands of a job and the physical and mental resources available to cope with them. Psychosocial Hazards at work place is related to stress and work dissatisfaction which may be due to health facilities, managers attitude towards workers, justice rewards for their works (e.g., pay, recognition, status, prospects of promotion, etc.) received for his or her work, and the supportive extent of the supervisors (Pun et al, 2003)⁷ and workers. Work stability, service conditions, job satisfaction, welfare conditions in the tea estates, etc. are also recognised as other psycho-social characteristics of a Tea Garden workers (Park, 2005)⁸.

OBJECTIVES OF THE STUDY

- 1) To study different types occupational health hazards faced by the tea garden workers
- 2) To identify the gender related risk factors related to occupational health hazards of the tea garden workers.
- 3) To evaluate distribution of occupational health hazard according to age, sex and type of work

II. METHODOLOGY

An observational study on occupational health hazard was carried out among the tea garden workers of Sessa Tea Estate of Dibrugarh district of Assam. The research is based on an empirical data. 280 samples have been collected from both Permanent and temporary workers of Sessa Tea Estate. The workers were distributed as indoor and outdoor workers. Data regarding different occupational health hazard have been collected from the workers by interview schedule and survey method. Data have also collected from the records of the tea garden hospital. The data were distributed as per age, sex type of work, different health hazards and risk factors. All the data has been analysed and tableted.

III. FINDINGS OF THE STUDY

Table: 1 Distribution Workers According to Age and Sex

Age group	Male	Percentage	Female	Percentage
≤20	3	2.50	7	4.37
21- 30	19	15.80	43	26.88
31-40	35	29.17	40	25.00
41-50	38	31.67	36	22.40
51-60	22	18.33	31	19.38
Above 60	3	2.50	3	1.88
Total	120	100	160	100.00

The above table shows distribution of workers according to their Age and Sex. Higher percentage of Male workers of Sessa tea garden 31.67 % falls between the age -group of 41-50 years followed by the age-group 31-40 and the percentage is 29.17%. But the higher percentage female worker is between the age group of 21-30 years and the percentage is 26.88% followed by 31-40 years (25%). Lower percentage of women workers falls

between the age less than and equal to 20 years in either sex. The workers of above 60 ages also found to work at Sessa Tea Estate and the percentage is 2.5% Male and 1.88% Female.

Table-2 Gender wise distribution of Workers according to place of work

Category	Male	Percentage	Female	Percentage
Field worker	97	80.83	151	94.38
Indoor worker	23	19.17	9	5.62
Total	120	100	160	100

The table shows distribution of workers according to the place of work. Out of 120 (respondents) male workers 80.83% work as field workers and 19.17% work in the factory. Whereas, out of 160 female workers 94.38% of workers work in the field and only 5.62% of female workers engage as factory workers.

Table 3 -Physical Hazards faced by the workers at the work place

Category	No. of respondent	
	Yes	%
Heat	10	3.58
Heavy Sunlight	248	88.58
Cold	0	0.0
Heavy rain	248	88.58
Noise	20	7.14
Vibration	20	7.14

In this table out of 280 sample, the number respondent of heavy sunlight and heavy rain is equal 248 (88.58%) and the respondent of noise and vibration is same 20 (7.14%). All the outdoor workers responded to exposure of heavy rain and heavy sunlight and the indoor workers responded noise and vibration. The respondent of Heat is reported by 2.56%.

Table 4- Gender Wise Distribution of Mechanical hazards faced by the workers at work place

Category	Male	%	Female	%
Cut injury	33	27.5	21	13.12
Blunt injury	27	22.5	28	17.50
Sprains	66	55.0	97	60.62
Abrasion	51	42.5	71	44.38
Bruises/Contusion	13	10.83	11	6.88

The above table shows the Gender wise distribution of workers according to the mechanical hazards faced by them during the course of their work. From the table it becomes clear that most of the workers suffer from Sprains i.e. 55% of male workers and 60.62% of female workers. Followed by Abrasion i.e, 42.5% of male workers and 44.38% of female workers. Cut injury, bruises and blunt injuries are also regarded as mechanical hazard suffer by the tea garden workers at work place. But during my study it is found higher in case of male workers.

Table 5 – Gender wise Distribution of Biological Hazards faced by the workers at work place

CATEGORY	Male	%	Female	%
Insect bite	43	35.83	57	35.62
Snake bite	03	2.50	02	1.25
Fungal infection	31	25.83	39	24.38
Leech bite	97	80.83	151	94.38
Mosquito bite- Japanese encephalitis, Dengue, Malaria	04	3.33	05	3.12

The workers of Sessa Tea Estate also face some biological hazards during the working hours. The plantation workers those who engage in field are more prone to biological hazards. From the table, it is learnt that leech bite is most common and more than 80% workers have experienced it, especially during rainy season. About 35% of the workers both male and female have the experience of different types of insect bites. Around 25.83% of male workers 24.38% of female had suffered from fungal infections. Almost 3% of workers have reported that they had suffered from Japanese Encephalitis, dengue and malaria which is due to mosquito bites.

Table 6- Gender wise Distribution of Chemical hazard faced by the workers

Category	Male	%	Female	%
Poisoning by insecticides	11	9.17	07	4.38
Eye injury by chemical	21	17.5	17	10.62
Skin rashes, eczema	39	32.5	33	20.62
Respiratory tract infection	21	17.5	11	6.88

Chemical health hazard is another important health hazard for the tea garden workers. The workers of Sessa Tea Estate are also become vulnerable to this issue. From the study, it is learnt that use of different types chemicals causes severe health issues such as poisoning, eye injury, skin rashes, eczema, RTI etc., The table shows that higher percentages of workers i.e. 32.5% of male workers and 20.62% of female workers suffer from Skin rashes, eczema due to the use of chemicals in tea plantation. 17.5% of the male workers and 10.62% of female workers suffer from eye injury by chemical followed by Respiratory tract infection, i.e. 17.5% of male workers and 6.88% of female workers. 9.17% of male workers and 4.38% of female workers have reported that they have poisoning by insecticide during the period of their work accidentally.

Table 7- Psycho-social hazard faced by the workers

Category	No. of respondent			
	Male	%	Female	%
Fear/Anxiety	10	8.33	23	14.38
Stress	13	10.83	47	29.38
Domestic Violence	7	5.83	23	14.38
Substance abuse	99	82.5	31	19.38

Psycho-social hazard occurs as a result of the dissatisfaction of the workers from the time and efforts they are investing. Tea garden workers have to perform their work continuously with the same postures. It requires lots of hard work and pressure to complete their daily targets and in return they receive very minimal wages and other benefits which results in different types of psycho-social hazards in the long run. From the study, it is learnt fear, anxiety, stress etc. are found to be higher in case of female and habits of substance abuse is found to be higher in case of male workers. that about 10.83% of male workers and 29.38% female workers have stress as a result they have the habit of substance abuse. As reported 82.5% of the male workers and 19.38% female workers have the habit of substance use. 8.33 % of male and 14.38% of female workers were suffered from fear and anxiety.

IV. DISCUSSION

In this study on Occupational health hazard of tea garden worker of Sessa Tea estate of Dibrugarh district of Assam 280 workers were taken for study. Out of 280 workers 120 workers are male and 160 workers are female. The workers were divided into different age groups. In this study higher percentage of women workers of sessa tea garden (108) 27.69% falls between the age -group of 21-30years and higher percentage male workers are in the age group 41-50 years. Lower percentage of both male and female workers are under 20 years and the percentage are 3% and 4.33% respectively. The percentage of workers of above 60 ages are found to work at Sessa Tea Estate. Out of 120 male workers 97 works as field workers and 23 works in the factory. And out of 160 female workers 151 are outdoor worker and 9 are indoor workers. Adolescents more or less do the same work as the adults, and are also engaged in spraying of pesticides and other chemicals in the tea garden which can be harmful to their health.⁹ In this study all the outdoor workers were responded exposure of heavy rain and heavy sunlight as well as all the indoor workers or factory workers were responded exposure of Noise and Vibration.

In this study 55% male and 60.62 % female were suffering from Sprains followed by Abrasion i.e, 42.5% male and 44.38% female. Sprain occurs due to lifting, carrying and shifting of the heavy tea leaves bag or *tupa* while plucking. Most of the worker have abrasion and pigmentation in fingers due to continuous plucking of tea leaves. During working patient may suffer from abrasion by the branches of tea tree. In the winter season workers are engaged with Chopping or cutting or digging where chances of cut injury, abrasion, bruises etc. In a study conducted in tea plantation at Sri Lanka fracture, sprain and dislocation are the most common type of injury followed by cuts and bruises.¹⁰ But in our study sprain is the most common type of injury followed by abrasion. Long standing hours also cause excessive sprain and fatigue, joint pain, muscle cramp etc.

Chemical health hazard is another important health hazard for the tea garden workers. The workers of Sessa Tea Estate are also become vulnerable to this issue. From the study, it is learnt that use of different types chemicals causes severe health issues such as poisoning, eye injury (17.5% male and 10.62% female workers), skin rashes, eczema, respiratory tract infection(17.5% male and 6.88%female workers) etc. Cut injury (27.5% male and 13.12% female workers) , bruises and blunt injuries are also regarded as mechanical hazard suffer by the tea garden workers at work place.

In a study out of 2,391 accidents in 1996, 478 accidents (20 per cent) were reported in the factory premises and 1,913 (80 per cent) in the field. Sprains/fractures and dislocations, bruises and cuts, and poisoning due to snake bites were the top three injuries reported. The reasons behind these injuries were accidental falls due to uneven and rough terrain, improper use of sharp cutting devices, and non-use of protective footwear. Occupational dermatitis, amputations, burns and injuries to internal organs were also reported.¹¹ the biological hazards was found among tea garden workers are leech bite, insect bite, mosquito bite and snake bite. All the outdoor workers were faced leech bite followed by insect bite (35.83% male and 35.63%female workers). Lower percentage of snake bite among the workers was found in this study.

Psychosocial Hazards at work place is related to stress and work dissatisfaction which may be due to health facilities, managers attitude towards workers, justice rewards for their works (e.g., pay, recognition, status, prospects of promotion etc.) received for their work and the supportive extent of the supervisors. Other psychosocial characteristics include work stability, service conditions, job satisfaction, welfare conditions, administration support etc. in the tea estates (Pun et al, 2003)¹². From this study regarding psychosocial hazard 10.83% male and 29.38% female workers have stress. Stress is one of factors of growing habit of substance abuse. As reported 82.5% male worker and 19.38% female workers have the habit of substance use.

V. CONCLUSION

The study was conducted on occupational health hazards of Tea Garden workers of Sessa Tea Estate of Dibrugarh district of Assam. In tea plantation except a few works, both female as well as male workers engage in the same types works. Occupational health hazards of female workers may have different than male, as they have different dress, different Body Mass Index, female related health issues etc. Different types of injury can occur during works like cut injury, Sprains, fractures, bruises, cuts etc. occur during clearing, digging, hoeing, uprooting and pruning. Musculoskeletal injuries are the result of repetitive and forceful movements, bending and lifting and carrying heavy or awkward loads. Exposure to harsh climatic conditions can cause sunburn, dehydration, frostbite, damage skin and eye etc. Poisoning and long-term health problems also occur from pesticide and chemical exposure. Long hours of work in standing position, carrying and lifting of heavy weight related health issue, Stress and harassment by supervisors etc. are also found among the women workers of the studied Tea Garden. Therefore, it is utmost necessity for the management to provide adequate Safety measures to the workers and precautions should be taken during works to prevent Occupational Health Hazards. A safe and healthy working environment is a fundamental right and principle at work. The Occupational Safety and Health Administration (OSHA) establishes enforceable standards to prevent workplace injuries and illnesses.¹³ it is important to conduct initial and periodic inspections of the workplace to identify new or recurring hazards.

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