

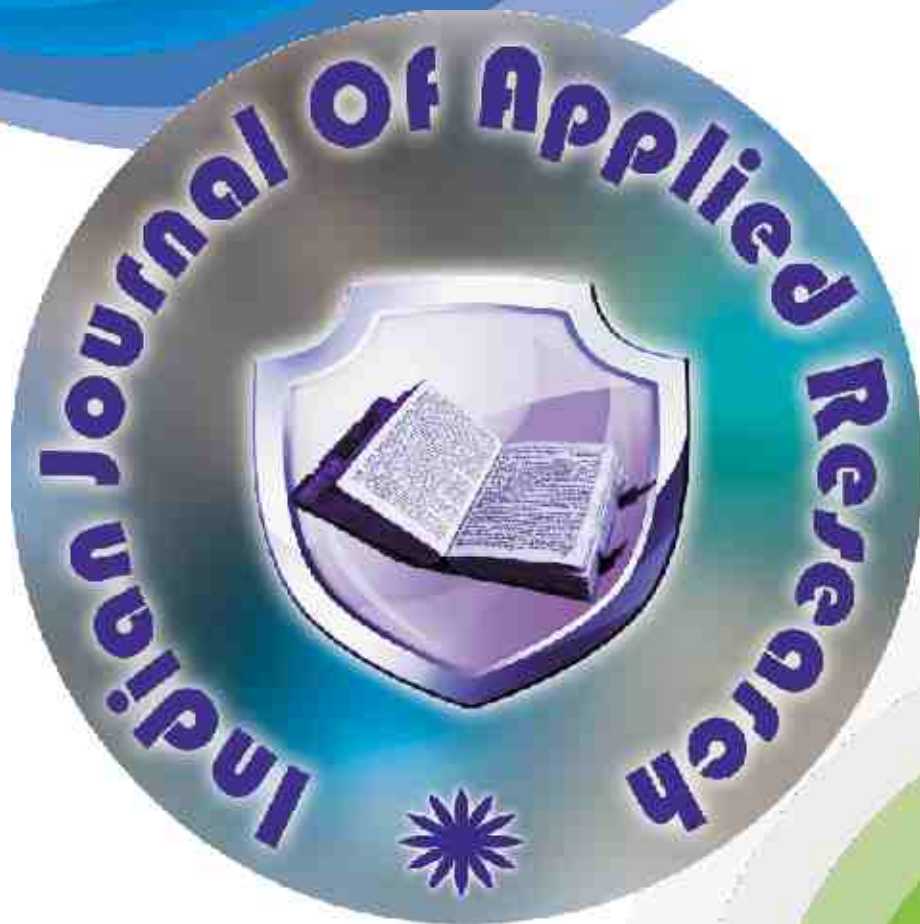
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Work And Health: A Situational Analysis Of Factory Workers

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ABSTRACT

India has a population of over 1 billion, approximately one-thirds of which is working class. Out of more than 2 lakh registered factories around 5000 are classified as chemical industries with more than 5 lakh employees. A wide range of factors in work such as incorrect working methods, environmental hazards, toxic substances can have adverse effects on the human body. Globalization and rapid industrial growth in the last few years has resulted in emergence of occupational health related issues. Therefore, it is a felt need to bring out the real conditions of labourers in factories at which they are working. The present paper examines the plight of employees working in an ordnance factory in terms of their socio-economic status, working conditions, health status, and the possible means for overcoming the issues they faced.

Keywords : Work; Health; Nutritional Status; BMI; Physical Activity

Introduction

Occupational health should aim at the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations; the prevention among workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; and the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological ability, according to the Joint Committee on Occupational Health of the ILO and WHO. India has a population of over 1 billion, approximately 33 % of which is working class. Out of more than 2 lakh registered factories around 5000 are classified as chemical industries with more than 5 lakh employees. A wide range of factors in work such as incorrect working methods, environmental hazards, toxic substances can have adverse effects on the human body. There is a tremendous potentiality for large-scale epidemiological research to determine the exposure and occupational risks.

Occupational Health And Ordnance Factory Workers

Occupational illnesses and injuries have long been a preventable blight to health. WHO estimates that 217 million cases of occupational illnesses and 250 million cases of injuries at work occurs each year worldwide, including 330000 deaths. Observation the relation between occupational hazards and poor health dates back several centuries, but a systemic description of diseases according to occupational causes was made only in the final years of the 17th century. Today's concept of occupational health has greatly changed from yesterday's concept of industrial health and now it is fast changing to environmental health because of greater awareness of the ecological problems arising from rapid industrialization, the use of complex processes, hazardous chemicals in industries and urbanization. Exposure to

chemicals and other biological agents account for one of the most common and most harmful of occupational health hazards that affect several industrial workers. The health risks from these hazards include liver damage, cancer, and reproductive disorders from chronic exposure to pesticides, heavy metals, and corrosive substances.

The Department of Occupation and Environmental Health stated that exposure to thermal degradation products of polyurethane induced chronic rhinitis in workers who had nasal inflammation. This was due to exposure to sprayed and heated polyurethane glue especially when heated by gun. Hearing loss is another hazard encountered by those who work in industries such as construction and manufacturing. In fact, hearing loss ranks with mechanical hazards in terms of being one of the most common occupational health hazards in both developed and developing countries. According to the provisions of the Occupational Safety and Health Ordinance, the workers of ordnance factory are prone to numerous diseases and they are exposed to five types of hazards viz., physical, chemical, biological, mechanical, and psychosocial, depending upon his/her occupation.

Need For The Study

The industrial workers today are placed in a highly complicated environment which is getting more indigenous. Occupational diseases tend to occur after an extended contact with hazards and so most people have a relatively low awareness of occupational diseases. To accelerate the process of providing Occupational Health Safety in organized sector initially, we have to identify the health problems prevailing among the working population. Therefore, an attempt has been made to gather data from the employees working in an ordnance factory regarding the occupational problems and the factors affecting their health.

Objectives

1. To know the socio-economic status of the employees working in the ordnance factory;
2. To find the working pattern of the employees included in the study;
3. To assess the health status of the employees through anthropometric measurement, biophysical and biochemical assessment;
4. To know the dietary pattern and physical activity level of the employees;
5. To know the health problems prevailing among the employees; and
6. To suggest ways and means to improve health status and to prevent employees from occupational diseases.

Research Design

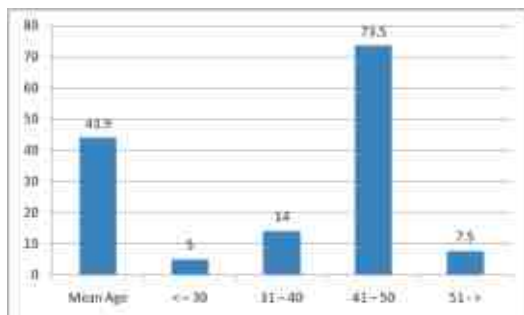
For the purpose of the present study an ordnance factory which is located at Tiruchirappalli in Tamil Nadu was selected from which a total of 200 employees were interviewed by using a structured interview schedule. The schedule consisted of the questions regarding personal particulars of the employees and covered anthropometric measures, dietary pattern, health problems, physical activity, biochemical and biophysical assessment, and their attitude towards safety measures available to them. For nutritional assessments particulars regarding anthropometric measurements such as weight, height, Body Mass Index, Waist Circumference, Hip circumference, Waist-Hip Ratio were also collected. Besides, biochemical assessment (haemoglobin) and biophysical assessment (blood pressure) were collected. To arrive at general conclusions the collected data were processed through descriptive methods and summarised.

Summary Of The Study

Social Status

To understand the social status of the employee-respondents their sex, age group, religion, caste group, educational status, marital status, family type and household size were analysed. A large majority of the employees working in the ordnance factory were males (93.5%). While grouping them on the basis of their age-group it is found that 73.5% of them were in the age-group of 41 - 50. The mean age for them is 43.9. Figure 1 evidences this.

Figure 1 Age-Group of the Employees



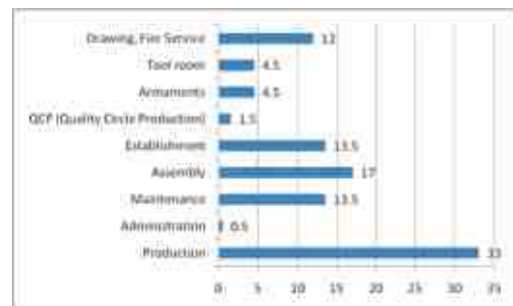
Nearly three-fourths (71%) of them were Hindus of which more than half of them belongs to Scheduled Castes (52%) followed by Most Backward Castes (38%), and Backward Castes (10%) while another 25% in the total were Christians. Both Mohammedan and Buddhists constituted 3.5% and 0.5% each respectively in the total. About half (46%) of them completed Secondary education while another two-fifths (39.5%) were either Degree or Diploma holders. Both Post Graduates and Higher Secondary graduates constituted 10% and 4.5% respectively in general. Almost all they got married (96.5%) of which 92.5% of them established neolocal families.

Their household includes an average of five members.

Working Pattern

Most of the employees were working in Production Unit (33%) followed by the employees working in Assembly Unit (17%), Establishment (13.5%), Maintenance (13.5%), Armaments (4.5%), Tool Room (4.5%), Quality Circle Production (1.5%), Administration (0.5%) and 12% in other units such as Drawing and Fire Service. Females found in Administration and Establishment. All the employees work for an average of 7.5 hours per day. Almost all were involved in moderate (94.5%) kinds of activities; only 5.5% in sedentary, according to them. Figure 2 portrays their working pattern.

FIGURE 2 : Employees' Working Pattern



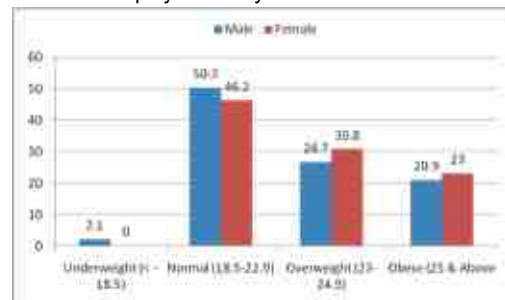
Employees who earn upto Rs.20, 700/- constituted one-thirds (33%) while another two-thirds (67%) earns upto Rs.50, 000/- per month. They were working for an average of 14.7 years. The pattern of service benefits available to them reveals dearness allowance and medical aid (58.5%), dearness allowance, bonus and medical aid (40%), dearness allowance, bonus and uniform allowance (1.5%). However, safety provisions like masks, hand gloves, shoes, helmet, ear plugs etc were not at the satisfactory level, according to them. About three-fifths (59%) of them reach work premise by two-wheelers while another 30% by foot.

Dietary Habit, Physical Activity, Health Status and Problems Faced

Dietary habit pattern of the employees reveals non-vegetarian (59%); vegetarian (35%); and ova-vegetarian (6%). They observe three times (71.5%) and two times (28.5%) meal pattern in a day; a large majority of them skip either breakfast (79%), lunch (12.3%), and dinner (8.7%). Employees spent an average of 1282 calories per day for their work.

To assess employees' health status Body Mass Index (BMI), waist circumference, waist-hip ratio, blood pressure, and haemoglobin level were analysed. Half of the total male employees were found with normal (18.5-22.9) BMI whereas another 26.7% found with overweight (23-24.9). Obese employees constituted 20.9% in the total. More than half of the females were either with overweight and obese and altogether constituted 53.3%; only 46.2% of them were with normal weight. Hence, it is obvious that both overweight and obesity are prevalent among all the employees. Figure 3 shows BMI of the employees.

FIGURE 3 : Employees' Body Mass Index



Waist circumference status of the employees shows that most of them irrespective of sex were at-risk of abdominal obesity. Among females at risk people constituted 77% while it was about 51% in the total males. Only 23% among females and 49.1% among males were with normal waist circumference. Of the total female employees three-fifths (61.5%) of them were at-risk level Waist-Hip Ratio while the same found among 45.5% of the total male employees. About 38.4% of the total female and 54.5% of the total male employees were with normal Waist-Hip Ratio.

More than half (51%) of the employees were with normal blood pressure; another 27% in the total were under Pre-hypertension stage; the rest 22% were under Stage 1 Hypertension. Employees' haemoglobin level varies depending on their sex. Almost all the male (98.3%) employees having normal haemoglobin level whereas the same status found only 53.8% of the total females. Mild anaemia among males found among 1.6% while 46.2% of the total females were with mild anaemia. Table 2 illustrates the health status of the employees.

TABLE 1 : Body Mass Index, Haemoglobin Level, and Waist Circumference

Body Mass Index	Sex	
	Male	Female
Underweight (<18.5>)	4 (2.1%)	-
Normal (18.5-22.9)	94 (50.3%)	6 (46.2%)
Overweight (23-29)	50 (26.7%)	4 (30.8%)
Obese (25 & above)	39 (20.9%)	3 (23%)
Total	187 (100)	13 (100)
Haemoglobin Level		
Normal	184 (98.3%)	7 (53.8%)
Mild Anaemic	3 (1.7%)	6 (46.2%)
Total	187 (100)	13 (100)
Waist Circumference		
Normal	92 (49.1)	3 (23)
At risk	95 (50.9)	10 (77)
Total	187 (100)	13 (100)

Health problems prevalent among the employees were severe headache, blurred vision, hearing disabilities, dermatological problems, difficulty of suffocation, bronchitis, shoulder pain, low back pain, pain in knee joints, pain in heels, pain in hands and fingers, palpitation, chest pain, hypertension and hypotension were the predominant ailments.

Conclusion

While concluding the present study on employees of ordnance factory it is to be highlighted that males' domination found to be more almost in all work divisions; most of them were at their middle age, married and their household includes an average of five members. Though they were working in the ordnance factory for about one and half decades and availed of service benefits, they were not provided of safety amenities at their satisfactory level. They were facing a varied range of health problems like headache, low back pain, shoulder pain, hypertension. Majority of their physical activity pattern was moderate. Almost all employees didn't follow a healthy diet pattern. Very few of them in both genders were anemic. Half of them were in the pre hypertension stage and found with overweight. Hence, it would be suggested to improve the work atmosphere in the factory. Safety provisions like masks, hand gloves, shoes, helmet, ear plugs have to be given along with the global strategy for achieving occupational health for all including strengthening of international and national policies for health at work and development of policy tools; developing healthy work environments and healthy work practices; strengthening of occupational health and support services for occupational health; development of occupational health standards based on scientific risk assessment; developing collaboration in occupational health services and organizations; and establishing registration and data system including development of information services for experts, effective transmission of data, and raising public awareness through strengthened public information system.

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