

# Health Status among Biscuit Factory Workers in Greater Noida, Uttar Pradesh: A Cross Sectional Study

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## Abstract

**Background:** Today the trend in all countries is towards industrialization. As industries are developing, occupational diseases are becoming more prominent.

**Purpose:** The purpose of this study is to see the effect of different environmental hazards like sugar dust, flour dust, vibratory sieves, effect of ammonia, skin diseases of oven operators, cuts and burns at mixing section, effect of noises at mixers, compressors, generators, blowers of ovens etc. on the health status of the biscuit factory workers.

**Objective of the Study:** To study the socio-demographic and health profile of the employees and to find the association between the various hazards and risk factors.

**Materials and Methods:** A cross sectional study was done among the factory workers of Anmol Biscuit factory, Greater Noida, Uttar Pradesh. A sample size of 250 was taken by simple randomization. Duration of study was for one month from 1<sup>st</sup> June to 1<sup>st</sup> July, 2014. Pre validated semi open ended questionnaire was used for data collection. The performa included information about socio demographic profile, present health status, nutritional status, general physical examination, anthropometric measurements and systematic examination.

**Results:** Among all the occupational hazards, thermal hazard was the most common (20%) and association between thermal hazards and use of protective equipment is statistically significant (Chi-square 0.029, P value < 0.05, at 1 d.f.). The associations between duration of the employment and types of hazards have found to be statistically insignificant (P value > 0.05 at 2 d.f.).

**Conclusion:** Most of the biscuit factory authorities do not invest much in the safety measures and protective equipment for their workers. These short term benefits might prove counterproductive in a long term.

**Keywords:** occupational environment, hazard, protective equipment.

## Introduction

As defined by the World Health Organization (WHO): "occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards".<sup>1</sup>

Occupational health is a multidisciplinary field of

healthcare concerned with enabling an individual to undertake his occupation, in the way that causes least harm to his health. 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 amongst workers of departures from health caused by their working conditions; the

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protection of workers in their employment from risks resulting from factors adverse to health.<sup>2,3</sup>

Various types of hazards are present inside the biscuit factory, like thermal hazards because of presence of ovens, and chemical hazards because of the chemicals used in this factory (eg: ammonia),<sup>4</sup> Again, airborne flour dust may cause rhinitis, throat disorders, bronchial asthma (baker's asthma) and eye diseases; sugar dust may cause dental caries.<sup>5,6,7</sup>

The purpose of this study is to see the effect of different environmental hazards like sugar dust, flour dust, vibratory sieves, effect of ammonia, skin diseases of oven operators, cuts and burns at mixing section, effect of noises at mixers, compressors, generators, blowers of ovens etc. on the health status of the biscuit factory workers.<sup>8,9,10</sup>

Aim and objectives of this study was:

1. To study the socio-demographic and health profile of the employees.
2. To find the association between the various hazards and risk factors.

Through medical examination of the employees, association between various hazards and risk factors has been established. This study helped in studying the socio demographic and health profile of the employees.

**Material and Methods**

A cross sectional study was done among the factory workers of Anmol Biscuit factory, Greater Noida, Uttar Pradesh. Total number of employees in this factory is 450. We have tried to include about 50% of those employees in our study. Total sample size in this study was 250. Before

conducting this study, we had taken written permission from the authorized concerned person. Again individual written consent was taken from all the study subjects of the biscuit factory. Data collection for the study was done from 1<sup>st</sup> June to 1<sup>st</sup> July, 2014. Pre validated, semi open ended questionnaire was used for data collection. The performa included information about socio demographic profile, present health status, nutritional status, general physical examination, anthropometric measurements and systematic examination. Doctor of Sharda Medical College is doing examination of an employee of the biscuit factory .( Figure no. 3) We also tried to find out if there were any effects of thermal, chemical hazards, effect of fumes etc. The data was entered in Microsoft Excel and analyzed using SPSS version 17.0.

**Results and Discussion**

All of the study population in this study was male, and most of them (54%) had completed their higher secondary education and intermediate education. Types of workers are presented in fig. 1. In this study, 68% people had no history of addiction, whereas the remaining 32% were addicted either to smoking, tobacco or alcohol. Types of addiction are depicted in fig. 2. Among all the occupational hazards, thermal hazard was the most common (20%) and the association between thermal hazards and use of protective equipment is statistically significant (Chi-square 0.029, P value < 0.05, at 1 d.f.). In systematic examination, only one employee had hypertension and 3% employees had dermatological problems. Regular health checkup was done only among 25% employees. Pre placement medical checkup was missing. The associations between duration of the employment and different type of hazards found statistically insignificant (Chi-square 2.11, P value > 0.05, at 2d.f.).

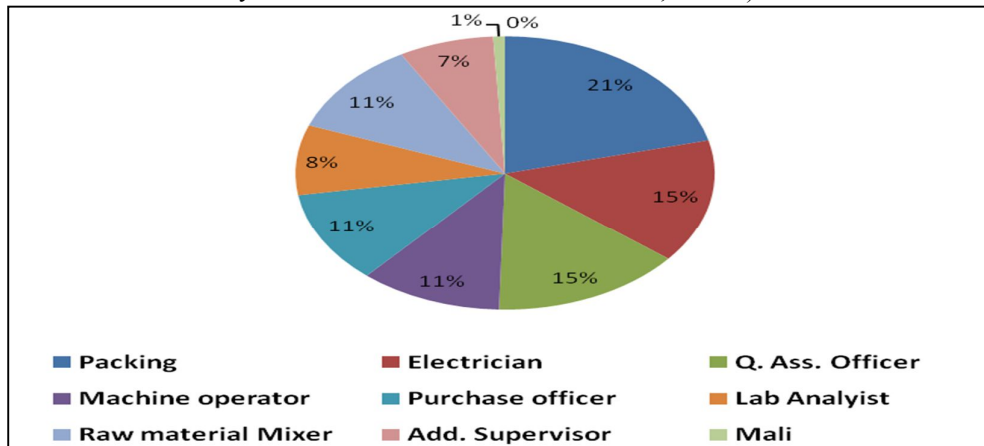
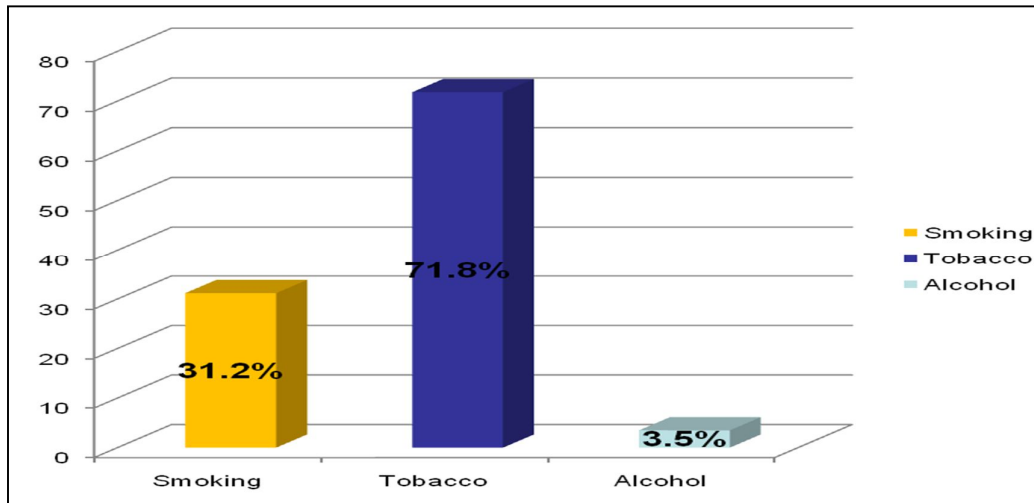


Figure 1. Pie chart showing the types of worker



**Figure 2.** Bar chart showing the types of addiction

It has been observed that employees at different work stations are faced with different types of hazards because the outputs produced are different at each stage of development. A similar type of study was conducted in a food industry, Zimbabwe to see the impact of occupational health and safety on worker productivity, where it was observed that thermal hazards were the same as in biscuit factories. They also stand with the same conclusions.

### Conclusions

Most of the biscuit factory authorities do not invest much in the safety measures and protective equipment for their workers. These short term benefits may be proven counterproductive in a long term.

Proper safety measures should be adopted by using Food Safety Programs like ISO2200, ISO14000, OHSAS18000 for safety of its personnel and property.

We will be doing more studies in different factories in Greater Noida and will focus more on the health hazards due to environmental factors at the work place. Our next study will be in the steel industry in Greater Noida, Uttar Pradesh.

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We are highly thankful to the authority of the Anmol Biscuit Factory, Greater Noida for their support to conduct this study and to the factory employees who have been very co-operative during the entire study.



**Figure 3.** Doctor of SMS&R, Sharda University examining the biscuit factory employee

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