A Quantitative Study to Assess the Prevalence of Occupational Diseases and Associated Risk Factors among Industrial Workers in an Urban Area

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Abstract

Occupational diseases remain a major public health concern among industrial workers due to continuous exposure to hazardous materials, poor ergonomics, and inadequate safety measures. A quantitative descriptive cross-sectional study was conducted among 100 industrial workers in an urban area to assess the prevalence of occupational diseases and associated risk factors. Data were collected using a structured questionnaire and observational checklist. The results revealed that 62% of workers reported at least one occupational health problem, with musculoskeletal disorders being the most common (38%), followed by respiratory problems (27%), skin disorders (18%), and hearing impairment (11%). Factors such as prolonged working hours, lack of protective equipment, and poor workplace ventilation were significantly associated with occupational diseases. The study concludes that preventive strategies, health education, and strict safety regulations are essential to reduce occupational health risks among industrial workers.

INTRODUCTION

Occupational health is an essential component of public health that focuses on the prevention of diseases and injuries related to workplace exposure. Industrial workers are particularly vulnerable to occupational diseases due to continuous exposure to harmful chemicals, dust, noise, and repetitive physical strain. These exposures can lead to chronic health conditions such as respiratory disorders, skin diseases, musculoskeletal problems, and hearing impairment.

Occupational diseases not only affect the health of workers but also reduce productivity and increase healthcare costs.

In developing countries, occupational safety measures are often inadequate due to limited resources and lack of awareness. Therefore, assessing the prevalence of occupational diseases and identifying associated risk factors is necessary to develop effective preventive strategies.

Need for the Study

Industrial workers face multiple occupational hazards daily. Many workers lack awareness regarding safety measures and fail to use personal protective equipment consistently. The absence of regular health screening programs further increases the risk of undetected occupational diseases.

Understanding the prevalence of occupational diseases among workers helps healthcare professionals and policymakers design targeted interventions to improve workplace safety. Hence, this study was undertaken to assess occupational diseases and associated risk factors among industrial workers.

Problem Statement

A quantitative study to assess the prevalence of occupational diseases and associated risk factors among industrial workers in urban area, kanpur

Objectives

1. To assess the prevalence of occupational diseases among industrial workers.
2. To identify common types of occupational diseases among workers.
3. To determine risk factors associated with occupational diseases.
4. To assess the use of personal protective equipment among workers.

Hypotheses

H1: There is a significant association between occupational exposure and occurrence of occupational diseases.

H0: There is no significant association between occupational exposure and occurrence of occupational diseases.

Operational Definitions

Occupational Disease:
Any health condition caused by exposure to harmful factors in the workplace.

Industrial Worker:
A person employed in manufacturing or processing industries.

Risk Factors:
Workplace conditions such as dust exposure, chemical exposure, noise, and repetitive movements.

CHAPTER 2

REVIEW OF LITERATURE

Previous studies have reported a high prevalence of occupational diseases among industrial workers. Musculoskeletal disorders are commonly associated with repetitive movements and prolonged standing. Respiratory problems are frequently linked to dust and chemical exposure.

Research findings indicate that lack of personal protective equipment significantly increases the risk of occupational diseases. Studies also show that workers with longer working hours have higher rates of occupational health problems.

Literature suggests that regular workplace monitoring and health education programs can significantly reduce occupational hazards.

CHAPTER 3

RESEARCH METHODOLOGY

Research Design

Quantitative descriptive cross-sectional research design.

Research Setting

Selected industries in an urban area.

Population

All industrial workers employed in selected industries.

Sample Size

100 industrial workers.

Sampling Technique

Simple random sampling.

Inclusion Criteria

- Workers employed for at least 6 months
- Workers willing to participate
- Workers present during data collection

Exclusion Criteria

- Workers with pre-existing chronic illnesses unrelated to occupation
- Workers absent during data collection

Data Collection Tool

Structured questionnaire consisting of:

Section A: Demographic Data

- Age
- Gender
- Educational status

- Years of work experience
- Working hours

Section B: Occupational Exposure

- Dust exposure
- Chemical exposure
- Noise exposure
- Use of protective equipment

Section C: Health Problems

- Musculoskeletal pain
- Respiratory symptoms
- Skin problems
- Hearing issues

Validity and Reliability

The tool was validated by experts in occupational health and nursing. Reliability was tested using pilot study method.

Data Collection Procedure

Permission was obtained from concerned authorities. Workers were informed about the purpose of the study, and consent was taken. Data were collected through interviews and observation.

DATA ANALYSIS AND RESULTS

Table 1: Age Distribution

Age Group	Frequency	Percentage
20–30	28	28%
31–40	36	36%
41–50	24	24%
Above 50	12	12%

Table 2: Occupational Diseases

Disease	Frequency	Percentage
Musculoskeletal	38	38%
Respiratory	27	27%
Skin Disorders	18	18%
Hearing Issues	11	11%
No Disease	6	6%

Table 3: Use of Protective Equipment

PPE Use	Frequency	Percentage
Regular	34	34%
Sometimes	41	41%
Never	25	25%

DISCUSSION

The findings of the study indicate that musculoskeletal disorders were the most common occupational health problem among industrial workers. This may be due to prolonged standing and repetitive tasks. Respiratory problems were also prevalent due to dust exposure and poor ventilation.

The results also showed that workers who did not use protective equipment regularly had a higher prevalence of occupational diseases. These findings highlight the importance of promoting safety measures and awareness programs in industries.

CONCLUSION

The study concludes that occupational diseases are highly prevalent among industrial workers. Lack of protective equipment and poor workplace conditions were major contributing factors. Regular health check-ups, workplace monitoring, and health education programs are essential to reduce occupational health risks.

Recommendations

1. Conduct regular occupational health screening.
2. Provide personal protective equipment to workers.
3. Conduct safety training programs.
4. Improve workplace ventilation.
5. Implement strict occupational health policies.

Limitations

- Small sample size
- Limited to selected industries
- Self-reported symptoms

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