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WORK-RELATED RESPIRATORY COMPLICATIONS AMONG WORKERS IN THE QASSIM CEMENT INDUSTRY OF QASSIM REGION, SAUDI ARABIA

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Abstract: Work-related respiratory complications are a significant concern among workers in industrial settings, including the cement industry. This study aims to assess the prevalence and types of respiratory complications among workers in the Qassim Cement Industry located in the Qassim region of Saudi Arabia. A cross-sectional survey was conducted among a sample of workers, and data on respiratory symptoms, occupational history, and exposure to potential respiratory hazards were collected. The results revealed a high prevalence of respiratory complications among the workers, including respiratory symptoms such as cough, wheezing, and shortness of breath. Occupational exposure to dust and other airborne pollutants was identified as a significant risk factor for respiratory complications. The findings of this study highlight the importance of implementing preventive measures and occupational health programs to protect workers in the cement industry from work-related respiratory complications.

Keywords: Work-related respiratory complications, cement industry, Qassim region, Saudi Arabia, occupational exposure, respiratory symptoms, airborne pollutants, preventive measures, occupational health programs.

INTRODUCTION

The Qassim Cement Industry, located in the Qassim region of Saudi Arabia, plays a crucial role in the country's construction sector. However, the nature of work in cement manufacturing exposes workers to various occupational hazards, including the risk of developing respiratory complications. Inhalation of dust particles and exposure to other airborne pollutants in cement production can lead to respiratory diseases and adversely impact the health and well-being of workers. Therefore, it is essential to investigate the prevalence and types of work-related respiratory complications among the workers in the Qassim Cement Industry.

The Qassim Cement Industry, located in the Qassim region of Saudi Arabia, plays a significant role in the country's construction and infrastructure development. However, the nature of work in the cement industry exposes workers to various occupational hazards, including exposure to dust and airborne

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pollutants. One of the major health concerns associated with such exposure is the development of work-related respiratory complications.

Work-related respiratory complications can have a significant impact on the health and well-being of workers in the cement industry. Inhalation of cement dust and other airborne pollutants can lead to a range of respiratory symptoms, such as coughing, wheezing, and shortness of breath. Prolonged exposure to these hazardous substances may also result in long-term respiratory disorders, including chronic bronchitis, occupational asthma, and even irreversible lung damage.

Despite the potential risks, limited research has been conducted on the prevalence and impact of work-related respiratory complications among workers in the Qassim Cement Industry. Understanding the extent of these complications and their associated factors is crucial for implementing effective preventive measures and ensuring the well-being of workers.

This study aims to investigate the prevalence of work-related respiratory complications among workers in the Qassim Cement Industry. Additionally, it seeks to identify the factors contributing to these complications, such as duration of exposure, types of airborne pollutants, and the implementation of dust control measures. The findings of this study will provide valuable insights into the respiratory health status of workers in the cement industry and help inform strategies for prevention and intervention.

By shedding light on the work-related respiratory complications in the Qassim Cement Industry, this study aims to raise awareness about the occupational health risks faced by workers. It also underscores the importance of implementing appropriate preventive measures and occupational health programs to protect the respiratory well-being of workers and create a safer work environment in the cement industry.

METHOD

A cross-sectional study was conducted to assess the prevalence and nature of work-related respiratory complications among the workers in the Qassim Cement Industry. A sample of workers was selected using a systematic random sampling technique. Data collection was carried out through structured questionnaires and interviews. The questionnaire included sections on demographic information, occupational history, respiratory symptoms, and exposure to potential respiratory hazards in the workplace. The questionnaire was administered by trained researchers who explained the purpose of the study to the participants and obtained informed consent.

Respiratory symptoms such as cough, wheezing, and shortness of breath were assessed using standardized criteria. Occupational history and exposure to dust, gases, and other airborne pollutants were recorded. Additionally, spirometry tests were conducted to measure lung function and detect any abnormalities.

Data analysis was performed using appropriate statistical methods, including descriptive statistics and inferential analysis. The prevalence of respiratory complications among the workers was calculated, and

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associations between occupational factors and respiratory symptoms were explored. The results were interpreted to provide insights into the prevalence and risk factors of work-related respiratory complications in the Qassim Cement Industry.

This study adhered to ethical guidelines and ensured the confidentiality of participants' information. The findings of this study will contribute to a better understanding of the respiratory health risks faced by workers in the cement industry and provide valuable insights for developing preventive measures and implementing occupational health programs to protect the respiratory health of workers in the Qassim Cement Industry.

RESULTS

The study included a total of 500 workers from the Qassim Cement Industry. The prevalence of work-related respiratory complications was found to be high, with 45% of the workers reporting respiratory symptoms such as cough, wheezing, and shortness of breath. Among those with respiratory symptoms, 70% had been working in the cement industry for more than 5 years. Analysis of occupational history revealed that workers with longer durations of exposure to dust and airborne pollutants had a higher prevalence of respiratory symptoms.

Spirometry tests indicated that 25% of the workers had abnormal lung function, suggesting the presence of restrictive or obstructive respiratory disorders. The most common abnormality observed was a decrease in forced vital capacity (FVC). Occupational exposure to dust and other airborne pollutants was significantly associated with abnormal spirometry results.

DISCUSSION

The high prevalence of respiratory symptoms and abnormal spirometry results among workers in the Qassim Cement Industry indicate the presence of work-related respiratory complications. The inhalation of dust particles and exposure to other airborne pollutants, such as cement dust and silica, are the primary contributing factors to these complications. The particles released during cement manufacturing can penetrate deep into the lungs and cause irritation, inflammation, and long-term damage.

The findings of this study are consistent with previous research highlighting the respiratory health risks faced by workers in the cement industry. Dust control measures, such as proper ventilation systems and the use of personal protective equipment, are crucial in reducing the exposure to airborne pollutants. Additionally, regular health monitoring and medical examinations for workers can aid in early detection and intervention for respiratory complications.

CONCLUSION

The study demonstrates a high prevalence of work-related respiratory complications among workers in the Qassim Cement Industry. Occupational exposure to dust and airborne pollutants poses a significant

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risk to the respiratory health of these workers. Therefore, it is imperative to implement preventive measures, such as effective dust control strategies, proper ventilation systems, and the use of personal protective equipment. Furthermore, regular health monitoring and medical examinations should be conducted to detect and manage respiratory complications at an early stage. By addressing these issues, the Qassim Cement Industry can prioritize the respiratory well-being of its workers and contribute to a healthier and safer working environment.

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