

## Global Congress on Integrated Healthcare

A joint Conference in Collaboration with United Research Forum, UK and Mutah University, Jordan

Under The Patronage of his Excellency Dr Yousef Goussous

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### Exposure to cement dust as a cause of increased respiratory symptoms and impaired lung function among Rashadiyah cement plant workers in Tafilah, Jordan

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#### Abstract

**Background:** Raw cement dust contains several chemicals including quartz. Several studies reported increased respiratory symptoms and impaired lung function among cement exposed workers. The objective of the present study was to assess the relationship between exposure to cement dust and respiratory health of exposed workers using sophisticated non-invasive lung function tests and multifactorial statistical techniques.

**Methods:** A cross-section study was conducted in Rashadiyah cement plant in Tafilah Governorate in Jordan. 300 exposed production workers from the crusher and packing sections and 303 controls not exposed to any noxious materials that could affect their chest were included. All workers were asked personal, occupational and BMRC questionnaire on respiratory symptoms and smoking habits. Forced spirometry and anthropometry were conducted on each worker. Multiple linear regression as well as other statistical tests were used. The level of significance for the present study was considered 0.05.

**Results:** Both cement exposed workers and the unexposed workers were similar in age, however, more smokers were encountered among the latter group compared to the former one. The mean duration of exposure of the workers to cement dust was 7.81 years. Chronic cough was significantly more encountered among cement exposed workers (22.7%), compared to unexposed workers (13.9%) where p-value was 0.005. Chronic bronchitis was also significantly more encountered among cement exposed workers compared to unexposed workers (19.0% and 9.9% respectively) where p-value was <0.001. Multiple linear regression analysis, after allowing for age, height, weight and smoking habit found that mean value for FVC, and FEV1 were significantly lower in the cement exposed workers compared to the unexposed group; and mean value of FEV1% was higher in the cement exposed workers compared to the unexposed group. This pattern is consistent with restrictive impairment. In addition, the mean values for FEF25%-75%, PEFR, FEF75, FEF50, and FEF25 were significantly lower among cement exposed workers compared with unexposed group. These findings are consistent with obstructive impairment. These effects in the exposed group were found duration of exposure related.

**Conclusion:** It is suggested that environmental exposure to cement dust may lead to higher prevalence of chronic bronchitis and the mixed impairment of ventilatory function. This could be due to existence of quartz in raw material of cement dusts. It is recommended that more effort should be done to protect respiratory systems of workers in cement factories.

**Key words:** Cement dust, respiratory symptoms, lung function, Jordan



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### Biography

Throughout my career, I have contributed to positive business results through effective organization, prioritization, and follow through of key organizational projects. My strengths and qualifications are an ideal match to the Associated Professor. Community Medicine requirements and will bring immediate value to our conference. In my former Associated Professor/Community Medicine role, I exercise a calculated and methodical approach to problem solving. While I am independently motivated, I appreciate collective efforts and collaborate productively within group settings. Moreover, I am competent in teaching methods and analyzing technique with proficiency in research methodology and SPSS.