

Research Article

Assessing the Health Status of Employed Personnel: A Cross Sectional Study in Khuzestan Cement Company

**¹Habibollah Azarbakhsh,²Elahe Piraei,
and ³Hamid Abasjodaki***

¹MSc of Epidemiology, Ahvaz Jundishapur University of Medical Sciences,
Ahvaz, Iran. M45987419@gmail.com

²Master of Epidemiology, Social Determinants of Health Research Center,
Yasuj University of Medical Sciences, Yasuj, Iran

³BSc of Professional Health Lorestan University of Medical Sciences,
Lorestan, Iran_M45987419@gmail.com (Corresponding)

ABSTRACT

Background and aim: Cement industry is one of the most important industries in the development of each country. Cement production is a contaminating process and affects many of the harmful factors in the work environment of the workforce. The purpose of this study was to determine the health status of the personnel of one of the country's cement companies based on the information in their health records.

Methods: This cross-sectional study was carried out in 2017. In this study, 363 personnel of Khuzestan Cement Company, which were mostly male, including QAAs, recurrent examinations and test results, were investigated. They got. The data were analyzed by SPSS19 software using descriptive statistical methods.

Results: The mean age of them was 60.42 years with a standard deviation of 62.8 years. Of these, 8 are women (20.2%) and 355 are men (80.97%). The history of surgery (4.39%) and the history of occupational accidents (7.31%) were common problems among personnel employed in Khuzestan Cement Company. (8.27%) had hearing loss and (14%) had pulmonary problems.

Conclusion: This study showed that employment in the cement industry, in addition to hearing loss, increases the risk of diabetes and skeletal diseases compared to other people in the community. Inappropriate conditions and adverse environmental factors in this industry are the likely cause of the spread of these health problems.

Keywords: Health status, Occupational health, Medical records, Khuzestan Cement Factory

INTRODUCTION

Cement industry is one of the most important industries in the development of each country. (1).Cement production is a polluting process and affects many harmful factors in the health work environment of workers (2). The cement production process is approximately at various stages of production (cement mill, crusher, soil salon, with home control, etc.), various amounts of dust are released and through the respiratory system into the lungs of the workers (3). Dust emissions are one of the concerns of the Ministry of Health and Environment in this industry today (4). With the expansion of the cement industry, the number of workers who are in contact with dust is increasing (5).The

increasing spread of technology and modern knowledge in human life, on the other hand, raises the speed of work and increases the amount of production and productivity, but on the other hand, it increases the problems of inertia, fatigue, nervous and mental stress, and the onset of the disease Pulmonary, renal, cardiovascular, and skeletal-muscular and ... have also been imposed on humans (6).

People account for about 1/3 of their lives in their workplace, and some of the long-term illnesses that are caused to people are usually unconscious. Today, industrial accidents and illnesses are the second cause of death in the industrial world (1).Cement dust, besides being

a harmful chemical pollutant in the workplace, also causes environmental problems and is also a detrimental factor for workers. Although there is no consensus among researchers on the relationship between work-related illnesses and cement dust (7,8), several studies have been conducted to assess the acute and chronic effects of exposure to cement dust (9, 10, 11) in a number of studies, there is a significant relationship between exposure to cement dust and chronic respiratory symptoms and decreased pulmonary capacity (12, 13, 14), while in a number of studies this relationship has not been observed (15, 16, 17). In some studies, lung obstruction has been a common cause of exposure to cement dust (16, 18). In some studies of respiratory symptoms, there is no significant difference between exposed group and control group in exposure to cement dust (15, 17) in a study conducted in Tanzania, there was a significant relationship between exposure to dust and chronic cough, chronic phlegm, chronic breath problems and chronic bronchitis (12). Generally, workers working in different parts of the cement production are in contact with various chemical, physical, ergonomic, biological and psychological factors that may expose them to various occupational diseases, therefore, given the high population density Working in the cement industry and the lack of proper use of effective respiratory protection devices, the study of the effects of exposure to these various factors in the work environment in implementing policies to improve the health of workers working in this industry is an important issue (5). In general, it can be said that occupational diseases are caused by contact with these factors, which include the payment of compensation in case of confirmation and reporting. Although these diseases seem to be less prevalent than other diseases, it is evident that a large group of workers, especially in developing countries, are more likely to

RESULTS:

This research was conducted on 363 employees of Khuzestan Cement Company. Their average age is 60.42 years with a standard deviation of 62.8 years. Of these, 8 are women (20.2%) and 355 are men (80.97%). Their work information is available in the following table.

encounter work-related problems and complications (19). Considering the fact that the cement industry is one of the most important and largest industries in the country and a significant part of its labor force, and considering that the reduction of occupational-related occupational diseases causes work-related absences, disability and the early withdrawal of workers from the cycle is generated (20). The purpose of this study was to determine the health status of the personnel of one of the country's cement companies based on the information in their health records.

METHOD:

This study was a descriptive cross sectional study in one of the cement companies of Khuzestan province of Iran in 2017. In this study, 363 personnel of the Khuzestan Cement Company, who were mostly male, were investigated. Information about these individuals has been extracted from their records in the Cement Company. This information includes age, sex, occupation, as well as classified information related to the health status including pulmonary, cardiovascular, hearing loss, history of drug use, history of smoking, history of surgery, history of hand tremor and skeletal and muscular weakness which was completed by the researchers after the case study of each of the company's personnel. When entering the information in the files, it was not possible to apply personal comments and seizure to the researchers. In this study, according to the position and duties of individuals, 11 disciplines (including production line workers, mechanics, electrical technician, driver, heavy machinery, production line engineers, administrative and financial personnel, safety and health and fire department, managers, security, Warehouse, service and cook). The data were analyzed by descriptive statistical methods after entering SPSS19 software.

Table 1: Personnel working at Khuzestan Cement Company in 2015

class	Abundance	percentage
Production Line Workers	123	33.88
the mechanic	64	17.63
Electrical Technician	48	13.22
warehouse keeper	9	2.47
Driver	9	2.47
Production Line Engineers	10	2.75
Administrative and financial personnel	47	12.94
Safety and Health	18	4.95
Managers	4	1.10
Protection	18	4.95
Chef	5	1.37
Services	8	2.20
Total	363	100

Table 2: Common health problems among personnel employed in Khuzestan Cement Company in 2015

Health Problem	Abundance	percentage
History of other diseases	58	16
blood pressure	10	2.80
Asthma	5	1.40
Vibration of the hand or muscle and skeletal weakness	26	7.20
Surgical history	143	39.40
Occupational incident	115	31.70
History of smoking	61	16.80
Long-term drug use history	27	7.40
Cardiovascular disease	14	3.90

Based on the above table, the history of surgery and the history of occupational accidents are common problems among personnel employed in Khuzestan Cement Company. 101 of these people (80.27%) had hearing loss, and 51 of them (14%) had pulmonary problems. 192 of these personnel (85.52%) were overweight (BMI 9.29-25), and 87 were obese (BMI> 30).

Table 3: Blood indexes of personnel employed in Khuzestan Cement Company in 2015

Cholesterol	Number	percentage	Tri glyceride	Number	percentage
Less than 200	151	41.6	Less than 150	155	42.7
200-239	133	36.63	150-199	97	26.7
More than 240	79	21.76	More than 200	111	30.57
Total	363	100	Total	363	100
HDL	Number	percentage	LDL	Number	percentage
Less than 45	8	2.2	Less than 100	107	29.47
45-60	250	68.87	100-159	192	52.89
More than 60	105	28.9	More than 160	64	17.63
Total	363	100	Total	363	100

Table 4: Fat Blood Glucose Personnel Employed in Khuzestan Cement Company in 2015

FBS	Number	Abundance
Less than 70	7	1.92
70-100	292	80.44
101-125	28	7.71
More than 126	36	9.91
Total	363	100

Based on the above table, 71.7% of the staff are at risk of blood glucose and 91.9% of them have high blood sugar.

DISCUSSION:

Cement dust is one of the most important chemical agents in the cement industry, which can cause respiratory problems and other

diseases in workers exposed to it. In the present study, the history of surgery (4.39%) and occupational accident (7.31%) were common problems. The prevalence of diabetes among the

employees of the company was 91.9% and the prevalence of obesity and overweight was 8.76%, which is consistent with the results of the study by HosseinAbadiet all in Shahroud (2014).The presence of risk factors for diabetes, including inappropriate nutrition including high fat, inadequate fiber, and excessive consumption of simple carbohydrates, which can be verified according to the company's food program, can be a risk factor for over-diabetic outbreaks among the company's staff (19).

In this study, the prevalence of pulmonary disease was 51 (14%) in the total population, which is higher than the results of other studies (22.21). In the study of Mirzaee et al., Who performed the Khash Cement Factory, Cement mist decreases pulmonary parameters, and cough and dyspnea were also higher in the exposure group than in the control group (23). In a study conducted in Tanzania, there was a significant correlation between the amount of exposure to dust and chronic cough, chronic sputum, burning discomfort and chronic bronchitis (12). However, in the study of Saifaghaee in workers of Jajrood Cement Factory, there was no significant difference in pulmonary function between case and control workers (24). Similar results for the increase in pulmonary diseases in the cement industry require special attention to reduce the risk factors of this disease in the cement industry.

The prevalence of hearing loss among the subjects was 101 (80.27%) hearing loss, which was expected due to high noise pollution in the cement production process. In other studies, there was a significant relationship between the incidence of hearing loss and the place where the task was performed. In the present study, 26 (2.7%) suffered from tremor or muscle and skeletal muscle weakness.

It can be said that occupational factors such as long standing, inappropriate body conditions during work, manual handling and the use of ladders and unsuitable steps to climb elevation, on skeletal problems, which constitute a high percentage of low back pain, Affect skeletalpain (19).

Given the prevalence of these diseases, the industry and similar industries should prioritize prevention programs and train workers in areas

such as health promotion and healthy lifestyles, as well as by providing dual control strategies such as The use of wet system in the Sheng-breaker and the use of double filtration systems in packaging and cement mills is essential, as well as training workers on the use of personal protective equipment. Used also the conditions governing this industry and personnel nutrition may also be associated with an increase in the prevalence of diseases, which will require further studies in this field in the future.

CONCLUSION:

According to the data of this study, it can be concluded that contact with cement dust and working and working in this plant cause respiratory and pulmonary problems, increase occupational injuries and increase skeletal and other diseases.

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