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Original Article

The Interaction of Noise Pollution and Blood Pressure in a Textile Factory in Ilam, Iran

Corresponding Author:

Parvin Nassiri, E-mail: nassiri@sina.tums.ac.ir

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Abstract:

The aim of the present study was to assess the industrial noise pollution and its effects on the blood pressure of workers during activities in textile factory in Ilam,which is situated in west of Iran. A cross-sectional study was performed on a group included 81 workers and 30 people as sample and control group, respectively. A questionnaire was filled out and then the other measurements including the total sound pressure level, weight, height, pulse, blood pressure and all the rest of medical examinations have been respectively done. The average sound pressure level measured for sample and control group was respectively (94.86 ±6.63) and (61.93 ± 4.56) dBA. The result also showed that by taking mean values for each quantitative variable, statistically only the age has significant difference between opposing groups. Sound frequency analysis in A and C networks over a frequency range between 125 to 16000 Hz revealed a significant differences in such away that sound pressure level for the sample group was higher than the limited threshold (85 dBA). Moreover, the results from the survey of the total sound pressure level in A –and C – weighted according to blood pressure status, BMI and age indicate a significant statistical correlation between the mentioned variables. A highly significant correlation was found by test between the level of sound pressure, blood pressure status, BMI and the age group in different octave band center frequencies. It is concluded that planning for working hours of workers to decrease the noise exposure and employment of young workers with appropriate BMI may reduce the adverse effects of noise.

Keywords:

Blood pressure ، Industrial activities ، Noise pollution

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