THE EFFECT OF CONTINUOUS NOISE ON BLOOD CORTISOL LEVEL IN TEXTILE INDUSTRY WORKERS

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ABSTRACT

Background: Noise is one of the most important hazardous factors in industrial environments. It can damage auditory, visual, neurological, psychological and hormonal systems, and can deteriorate physiological and cognitive functions. This study aimed to examine the effect of continuous noise on blood cortisol level in textile industry workers.
Subjects and Method: This was cross-sectional study conducted at PT. Iskandar Indah Printing Textile, Surakarta, Central Java. A sample of 75 workers in weaving section was selected for this study by purposive sampling. The sample was ≥20 years of age and had work ≥ 1 year. The dependent variable was blood cortisol level. The independent variable was continuous noise. Blood cortisol level was measured by ELISA method. Noise exposure was measured by Sanfix GM1356 sound level meter. Noise exposure was categorized in 3 groups (≥85 dBA, 70 to <85 dBA, <70 dBA). The data were analyzed by chi square test with odds ratio as the measure of effect.
Results: Workers with noise exposure ≥ 85 dBA were more likely to have an increased blood cortisol level than counterparts with noise exposure 70 to <85 dBA (OR= 5.76; CI 95%= 1.36 to 24.36; p= 0.012). Workers with noise exposure ≥85 dBA were more likely to have an increased blood cortisol level than counterparts with noise exposure <70 dBA (OR= 7.94; CI 95% 1.88 to 33.49; p= 0.002). Workers with noise exposure 70 to <85 dBA were more likely to have an increased blood cortisol level than counterparts with noise exposure <70 dBA (OR= 1.62; CI 95%= 0.45 to 4.20; p= 0.321).
Conclusion: Noise exposure is associated with an increased risk of high blood cortisol level among textile industry workers.

Keywords: continuous noise, blood cortisol, textile industry worker

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