

THE EFFECT OF NOISE INTENSITY AND WORKER CHARACTERISTICS ON LABOR BLOOD PRESSURE IN THE PRODUCTION DEPARTMENT OF PT. X

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ABSTRACT

Noise intensity in the production section of PT X averaged 87 dB(A), exceeding the Threshold Value according to Permenkes No. 70 of 2016. Workers experience fluctuations in blood pressure before and after working in noise exposure with an increase of 86% and a decrease of 14%, so it needs to be controlled. This study aims to determine the effect of noise intensity and worker characteristics on blood pressure.

The method used was observational analytic with a cross-sectional approach, involving 21 workers at PT X. The independent variables are noise intensity and workers' characteristics (age, working period, smoking habit, body mass index), with the dependent variable being workers' blood pressure. The sampling technique used total sampling. Data were collected through observation, measurement, and interview using a sound level meter, digital tensimeter, and interview sheet. Data were analyzed using Simple Linear Regression statistical test.

The results showed that two production areas out of four measurement areas had noise above the threshold, namely 91 dB(A) and 86 dB(A). A total of 18 workers experienced an increase in blood pressure after work. The characteristics of workers at PT.X are the oldest age of 40 years and the youngest age of 20 years, a working period of 6 to 96 months, 14 smokers, with a body mass index of 13.4 to 32.6. There is a significant influence between noise intensity, age, and smoking habits with increased blood pressure ($p < 0.005$).

The conclusion of this study is that noise intensity, age, and smoking habits have a significant effect on workers' blood pressure. Efforts that can be made by companies include the provision of ear protective equipment such as ear muffs and ear plugs, job rotation, and routine health checks to reduce the risk of increased blood pressure due to noise exposure.

Keywords : *Noise Intensity, Worker Characteristics, Blood Pressure*

PENGARUH INTENSITAS KEBISINGAN DAN KARAKTERISTIK PEKERJA TERHADAP TEKANAN DARAH TENAGA KERJA DI BAGIAN PRODUKSI PT. X

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ABSTRAK

Intensitas kebisingan di bagian produksi PT. X rata-rata sebesar 87 dB(A), melebihi Nilai Ambang Batas sesuai Permenkes No. 70 Tahun 2016. Pekerja mengalami fluktuasi tekanan darah sebelum dan sesudah bekerja dalam paparan kebisingan dengan kenaikan sebesar 86% dan penurunan 14%, sehingga perlu pengendalian. Penelitian ini bertujuan mengetahui pengaruh intensitas kebisingan dan karakteristik pekerja terhadap tekanan darah.

Metode yang digunakan adalah analitik observasional dengan pendekatan *cross-sectional*, melibatkan 21 pekerja di PT. X. Variabel bebasnya adalah intensitas kebisingan dan karakteristik pekerja (usia, masa kerja, kebiasaan merokok, indeks massa tubuh), dengan variabel terikatnya tekanan darah pekerja. Teknik pengambilan sampel menggunakan *total sampling*. Pengumpulan data dilakukan melalui observasi, pengukuran, dan wawancara menggunakan Sound Level Meter, tensimeter digital, dan lembar wawancara. Data dianalisis menggunakan uji statistik Regresi Linear Sederhana.

Hasil penelitian menunjukkan dua area produksi dari empat area pengukuran yang memiliki kebisingan di atas ambang batas, yaitu 91 dB(A) dan 86 dB(A). Sebanyak 18 pekerja mengalami peningkatan tekanan darah setelah kerja. Adapun karakteristik pekerja di PT.X yakni usia tertua 40 tahun dan termuda 20 tahun, masa kerja 6 hingga 96 bulan, 14 pekerja perokok, dengan indeks massa tubuh 13,4 hingga 32,6. Ada pengaruh signifikan antara intensitas kebisingan, usia, dan kebiasaan merokok dengan peningkatan tekanan darah ($p < 0,005$).

Kesimpulan penelitian ini adalah intensitas kebisingan, usia, dan kebiasaan merokok berpengaruh signifikan terhadap tekanan darah pekerja. Upaya yang dapat dilakukan perusahaan termasuk penyediaan alat pelindung telinga seperti *ear muffs* dan *ear plugs*, rotasi kerja, dan pemeriksaan kesehatan rutin untuk mengurangi risiko peningkatan tekanan darah akibat paparan kebisingan.

Kata kunci : Intensitas Kebisingan, Karakteristik Pekerja, Tekanan Darah