

ABSTRACT

THE RELATIONSHIP BETWEEN NOISE INTENSITY, LENGTH OF SERVICE, AND AGE WITH NOISE INDUCED HEARING LOSS AMONG WORKERS AT PT BUKIT ASAM TBK IN 2024

By

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Background: Workplace noise is one of the main risk factors that can cause hearing loss among workers. Noise Induced Hearing Loss (NIHL) is a decrease in hearing ability caused by long-term exposure to excessive noise. PT Bukit Asam Tbk has a high level of noise, with several measurement points exceeding the Threshold Limit Value (TLV) of ≥ 85 dB. This study aimed to determine the relationship between noise intensity, length of service, and age with NIHL among workers at PT Bukit Asam Tbk

Methods: This study employed an analytical observational design with a cross-sectional approach. The sample consisted of 126 workers who met the inclusion criteria. Data were obtained from audiometric examination results (Medical Check-Up) and noise level measurements conducted by PT Sucofindo. Individual characteristics such as age and length of service were collected using questionnaires. Data were analyzed using the Chi-Square test with a significance level of $p < 0.05$.

Results: The results showed that 67 workers (53.17%) were exposed to noise levels ≥ 85 dB and 59 workers (46.83%) < 85 dB. Most workers had a length of service ≥ 5 years (60.3%) and were under 40 years of age (69%). A total of 11 workers (8.7%) were found to have NIHL, all of whom were in the group exposed to noise levels ≥ 85 dB. There was a significant relationship between noise intensity, length of service, and age with the incidence of NIHL ($p < 0.05$).

Conclusions: : There is a significant relationship between noise intensity, length of service, and age with Noise Induced Hearing Loss (NIHL) among workers at PT Bukit Asam Tbk. Prolonged exposure to high noise levels and older age are the main factors contributing to the increased risk of NIHL.

Keywords: Noise Induced Hearing Loss, noise intensity, length of service, age, workers

ABSTRAK

HUBUNGAN ANTARA INTENSITAS BISING, MASA KERJA DAN USIA DENGAN *NOISE INDUCED HEARING LOSS* PADA PEKERJA DI PT BUKIT ASAM TBK PADA TAHUN 2024

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Latar Belakang: Kebisingan di tempat kerja merupakan faktor risiko utama penyebab gangguan pendengaran pada pekerja. *Noise Induced Hearing Loss* (NIHL) adalah penurunan pendengaran akibat paparan bising dalam jangka waktu lama. PT Bukit Asam Tbk memiliki tingkat kebisingan tinggi, terdapat beberapa titik pengukuran melebihi Nilai Ambang Batas (NAB) ≥ 85 dB. Penelitian ini bertujuan mengetahui hubungan antara intensitas bising, masa kerja dan usia dengan NIHL pada pekerja di PT Bukit Asam Tbk.

Metode: Penelitian ini menggunakan desain analitik observasional dengan pendekatan *cross-sectional*. Sampel terdiri dari 126 pekerja yang memenuhi kriteria inklusi. Data diperoleh dari hasil pemeriksaan audiometri (*Medical Check Up*) dan pengukuran kebisingan oleh PT Sucofindo. Sementara itu, data terkait karakteristik individu seperti usia dan masa kerja dikumpulkan melalui pengisian kuesioner. Analisis data dilakukan menggunakan uji *Chi-Square* dengan ($p < 0,05$).

Hasil: Hasil penelitian menunjukkan bahwa sebanyak 67 pekerja (53,17%) terpapar kebisingan ≥ 85 dB dan 59 pekerja (46,83%) < 85 dB. Mayoritas pekerja memiliki masa kerja ≥ 5 tahun (60,3%) dan berusia < 40 tahun (69%). Kasus NIHL ditemukan pada 11 pekerja (8,7%), seluruhnya pada kelompok dengan intensitas bising ≥ 85 dB. Terdapat hubungan signifikan antara intensitas bising, masa kerja, dan usia dengan kejadian NIHL ($p < 0,05$).

Kesimpulan: Terdapat hubungan yang signifikan antara intensitas bising, masa kerja dan usia dengan *Noise Induced Hearing Loss* (NIHL) pada pekerja di PT Bukit Asam Tbk. Paparan kebisingan tinggi dalam jangka waktu lama serta usia pekerja yang lebih tua merupakan faktor utama yang meningkatkan risiko terjadinya NIHL.

Kata Kunci: *Noise Induced Hearing Loss*, kebisingan, masa kerja, usia, pekerja