

ABSTRAK

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PENGARUH PAJANAN GETARAN DAN KARAKTERISTIK PEKERJA TERHADAP RISIKO *MUSCULOSKELETAL DISSODERS* PADA OPERATOR STUDI PADA ALAT BERAT *HARBOUR MOBILE CRANE* DI WILAYAH KERJA PT.BERLIAN JASA TERMINAL INDONESIA

xv + 76 Halaman + 11 Tabel + 8 Lampiran

Getaran yang diterima operator dapat menyebabkan kelelahan otot dan risiko gangguan muskuloskeletal. Risiko ini juga dipengaruhi oleh usia dan masa kerja. Hasil survei pra-penelitian di PT BJTI menunjukkan bahwa 80% dari 10 pekerja bekerja 8 jam per hari, 100% memiliki masa kerja >5 tahun, dan 100% berusia >30 tahun. Keluhan nyeri di pinggang, bahu, dan lengan dialami oleh 30% pekerja, sedangkan 40% mengeluhkan nyeri punggung. Pengukuran getaran pada alat HMC menunjukkan nilai 0,898 m/s² pada 100% dari 2 alat yang diukur. Penelitian ini bertujuan untuk menganalisis pengaruh pajanan getaran dan karakteristik pekerja terhadap risiko muskuloskeletal pada operator HMC.

Penelitian ini menggunakan jenis penelitian analitik dengan pendekatan cross sectional. Populasi dalam penelitian ini adalah 54 orang pada shift pagi, dengan sampel sebanyak 35 orang, Pengambilan sampel menggunakan teknik simple random sampling. Penelitian ini dilakukan dengan cara pengukuran getaran menggunakan *Human Vibration Meter* (HVM) Dan pengukuran musculoskeletal menggunakan SNI 9011;2021 Pada bagian operator HMC di PT.BJTI.

Hasil penelitian menunjukkan bahwa 97,1% operator HMC terpapar getaran di bawah ambang batas. 51,4% risiko msds sedang banyak dialami oleh operator HMC. 77,1% Operator HMC berusia >30 tahun. 77,1% Operator HMC memiliki masa kerja ≥ 5 tahun. tidak terdapat pengaruh signifikan antara pajanan getaran dan risiko musculoskeletal disorders (MSDs) pada operator HMC ($p = 0,615$). Namun, terdapat pengaruh signifikan antara usia ($p = 0,006$) dan masa kerja ($p = 0,006$) terhadap tingkat risiko MSDs. Operator berusia < 30 tahun dan masa kerja <5 tahun cenderung memiliki risiko rendah, sedangkan usia >30 tahun dan masa kerja >5 tahun dominan pada risiko sedang.

Tidak ada pengaruh getaran pada risiko MSDs rendah 23,5%, risiko MSDs Sedang 50,0%, risiko MSDs tinggi 0%. Terdapat pengaruh usia pada risiko MSDs 55,6% risiko sedang di usia >30 tahun. Terdapat pengaruh mas kerja pada risiko MSDs 55,6% di masa kerja ≥ 5 tahun. Disarankan peningkatan edukasi ergonomi, pengendalian getaran, serta penelitian lanjutan dengan sampel lebih besar dan variabel yang lebih beragam.

Kata kunci : Getaran, Karakteristik Pekerja, dan Muskuloskeletal.

Daftar bacaan : 59 referensi (2014–2024)

ABSTRACT

Aisya Sofi Yasmin Falah

The Effect Of Vibration Exposure And Worker Characteristics On Musculoskeletal Disorders Risk In Operators

(A Study On Harbor Mobile Crane Equipment At Pt. Berlian Jasa Terminal Indonesia)

xv + 76 Pages + 11 Tables + 8 Appendices

Vibration exposure received by operators was found to cause muscle fatigue and an increased risk of musculoskeletal disorders (MSDs). This risk was also influenced by age and length of employment. A preliminary survey conducted at PT BJTI showed that 80% of the 10 observed workers worked 8 hours per day, 100% had more than 5 years of work experience, and 100% were over 30 years old. Complaints of pain in the waist, shoulders, and arms were reported by 30% of the workers, while 40% reported back pain. Vibration measurements on HMC equipment showed a value of 0.898 m/s² on 100% of the two machines measured.

This study aimed to analyze the influence of vibration exposure and worker characteristics on the risk of musculoskeletal disorders among HMC operators. The study used an analytical research design with a cross-sectional approach. The population included 54 workers on the morning shift, with a sample of 35 workers selected using simple random sampling. Vibration exposure was measured using a Human Vibration Meter (HVM), and musculoskeletal risk was assessed using the Indonesian National Standard SNI 9011:2021, focusing on HMC operators at PT BJTI.

The results showed that 97.1% of HMC operators were exposed to vibration levels below the threshold limit. A total of 51.4% of operators experienced a moderate risk of MSDs. Additionally, 77.1% of operators were over 30 years old, and 77.1% had worked for 5 years or more. There was no significant relationship between vibration exposure and the risk of MSDs among HMC operators ($p = 0.615$). However, there was a significant relationship between age ($p = 0.006$) and length of employment ($p = 0.006$) with the level of MSDs risk. Operators under 30 years old with less than 5 years of work experience tended to have a low risk, while those over 30 and with more than 5 years of experience predominantly fell into the moderate-risk category.

There was no effect of vibration exposure on MSDs risk: 23.5% were at low risk, 50.0% at moderate risk, and 0% at high risk. Age had an influence, with 55.6% of workers over 30 years old experiencing moderate MSDs risk. Similarly, 55.6% of workers with 5 or more years of work experience also fell into the moderate-risk category. It is recommended to improve ergonomic education, implement vibration control strategies, and conduct further research with larger samples and more diverse variables.

Keywords : Vibration, Worker Characteristics, Musculoskeletal Disorders..

References : 59 Reference (2014-2024)