

# Efek Latihan Peregangan Terhadap Nyeri Punggung Bawah Pada Operator Dump Truck di Industri Pertambangan Batu Bara PT. X Tahun 2021 = The Effect of Stretching Exercise on Low Back Pain towards Dump Truck Operators at Coal Mining Industry PT. X in 2021

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## Abstrak

Latar belakang: Nyeri Punggung Bawah (NPB) merupakan masalah kesehatan kerja yang dilaporkan sebagai alasan umum ketidakhadiran operator dump truck di Industri Pertambangan PT.X. Operator alat berat memiliki risiko untuk terjadi NPB karena aktivitas pekerjaan. Sementara latihan peregangan membantu mencegah NPB dengan meningkatkan fleksibilitas neuromuskuler dan mengurangi rasa nyeri. Manfaat latihan peregangan untuk operator alat berat khususnya dump truck belum banyak diteliti dan perlu dilakukan intervensi berupa latihan peregangan terhadap operator dump truck yang mengalami NPB.

Tujuan: Mengetahui efek latihan peregangan saat bertugas terhadap NPB pada operator dump truck di industri pertambangan PT.X

Metode: Penelitian quasi experiment dengan pendekatan control group pretest-posttest melibatkan 76 operator yang mengalami NPB, masing-masing 38 operator dipilih secara purposive sampling untuk kelompok kontrol dan intervensi. Kelompok kontrol hanya menerima video edukasi pencegahan NPB dan kelompok intervensi menerima intervensi standar dan Latihan Peregangan Punggung Bawah. Penelitian dilakukan selama 4 minggu. Tingkat nyeri dan fleksibilitas diukur setiap minggunya. Tingkat nyeri dan fleksibilitas punggung bawah dinilai dengan Numeric Rating Scale (NRS) dan V-Sit and Reach Test. Data yang diperoleh dianalisis menggunakan analisis univariat, bivariat, dan general linear model (GLM).

Hasil Penelitian: Selama latihan peregangan, terdapat penurunan signifikan tingkat nyeri dan peningkatan fleksibilitas setiap minggunya. Pada akhir intervensi, terdapat perbedaan yang signifikan antara tingkat nyeri punggung bawah dan fleksibilitas pada kelompok kontrol dan intervensi ( $p < 0,001$ ). Tidak ada hubungan signifikan antara penurunan nyeri dan peningkatan fleksibilitas selama latihan peregangan.

Kesimpulan: Latihan peregangan punggung bawah secara signifikan dapat mengurangi tingkat nyeri dan meningkatkan fleksibilitas pada NPB. Latihan peregangan ini dapat digunakan sebagai salah satu program latihan peregangan di tempat kerja untuk pencegahan NPB. Diperlukan penelitian lebih lanjut mengenai pengaruh latihan peregangan pada operator alat berat lainnya.

.....Background : Lower Back Pain (LBP) is an occupational health problem that is reported as a common reason for the absence of dump truck operators in the mining industry of PT.X. Heavy Equipment Vehicle (HEV) operators are at risk for LBP due to work activities. Stretching exercises help prevent LBP by increasing neuromuscular flexibility and reducing pain. The benefits of stretching exercises for HEV operators, especially dump trucks, haven't been studied yet and interventions need to be carried out regarding the effects of stretching exercises on dump truck operators who experience LBP

Purpose: Determine the effect of stretching exercises especially pain level and flexibility in lower back while on duty towards low back pain in dump truck operators at the coal mining industry PT.X.

Methods: A nonrandomized controlled trial with a pretest-posttest control group approach involved 76 dump truck operators who experienced LBP, each of which 38 operators were selected by purposive sampling for

the control and intervention groups. The control group only received LBP prevention education videos and the intervention group received standard intervention and Lower Back Stretching Exercises. This study were performed for 4 weeks. Pain and flexibility levels were measured at the start of the program, weekly, until the end of the program. Low back pain and flexibility were assessed using the Numeric Rating Scale (NRS) and the V-Sit and Reach (VSR) test. The data obtained were analyzed using univariate, bivariate, and general linear models (GLM).

Results: During stretching exercises, there was a significant reduction in pain levels and a significant increase in flexibility each week. At the end of the intervention, there was a significant difference between the level of pain and flexibility on LBP in the control and intervention groups ( $p < 0.001$ ). There is no significant relationship between reduced pain and increased flexibility during stretching exercises.

Conclusion: Lower back stretching exercises can significantly reduce pain levels and increase flexibility in LBP. This stretching exercise can be used as one of the stretching programs at work for the prevention of LBP. Further research is needed on the effect of stretching exercises on other heavy equipment operators.