

Hubungan Antara Monotonitas Pekerjaan dengan Stres Kerja pada Operator Crane di Terminal Nilam dan Jamrud Pelabuhan Tanjung Perak

Correlation Between Work Monotony with Work Stress on Crane Operators in Terminal Nilam and Jamrud Tanjung Perak Harbour

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ABSTRAK

Latar Belakang: Stres kerja dapat terjadi pada setiap pekerja, termasuk operator crane. Pekerjaan yang monoton dapat menyebabkan stres kerja. Stres kerja dapat timbul saat tenaga kerja melakukan pekerjaan yang sama dan melakukannya berulang kali tanpa adanya variasi dalam pekerjaannya.

Tujuan: Penelitian ini bertujuan untuk mengetahui apakah terdapat hubungan antara monotonitas pekerjaan dengan stres kerja pada operator crane di Terminal Nilam dan Jamrud Pelabuhan Tanjung Perak.

Metode: Desain studi cross-sectional dilakukan antara Februari - Maret 2021. Subjek dalam penelitian ini adalah 58 operator crane yang diperoleh dari perhitungan rumus Slovin. Kuesioner DASS 42 digunakan dalam penelitian ini dan instrumen dalam versi bahasa Indonesia telah divalidasi. SPSS versi 21 digunakan untuk analisis deskriptif dan bivariat berupa analisis koefisien kontingensi dan korelasi Spearman.

Hasil: Hasil penelitian menunjukkan bahwa usia rata-rata adalah 38 tahun dan rata-rata masa kerja adalah 6 tahun. Semua operator crane adalah laki-laki. Dalam penelitian ini didapatkan hasil bahwa sebagian besar operator crane menganggap bahwa pekerjaannya monoton (75,9%). Sementara itu, stres kerja yang dialami oleh operator crane dominan pada skala normal (34,5%), namun operator crane lainnya mengalami stres kerja mulai dari yang ringan sampai yang sangat berat. Hasil juga menunjukkan bahwa terdapat hubungan antara pekerjaan monoton ($r=0,570$; $p\text{-value}=0,000$) dengan stres kerja pada operator crane.

Kesimpulan: Ada beberapa penyebab stres kerja. Pekerjaan yang monoton dapat menyebabkan stres kerja. Penting bagi operator crane untuk memiliki variasi dalam pekerjaan mereka dan bagi perusahaan untuk mengatur waktu istirahat yang tepat sehingga operator crane memiliki cukup waktu untuk beristirahat setelah jam kerja yang panjang. Selain itu, peneliti juga menyarankan kepada peneliti selanjutnya untuk dapat melakukan penelitian serupa terkait faktor-faktor lain yang dapat menyebabkan stres kerja. Variabel kejenuhan kerja dan variasi dalam kerja dapat menjadi variabel yang dapat dipertimbangkan untuk dilakukan penelitian lebih lanjut dalam mengetahui hubungannya dengan stres kerja.

Kata kunci: Monotonitas, Operator, Stres

ABSTRACT

Background: Work stress can happen to any worker, including crane operators. Monotonous work might cause work stress. Work stress can arise when workers do the same job and do it repeatedly without any variation in their work.

Objectives: This study aims to determine whether there is a correlation between work monotony with work stress on crane operators in Nilam and Jamrud Terminals of Tanjung Perak Harbor.

Methods: A cross-sectional study design was conducted between February - March 2021. The subjects in this study were 58 crane operators obtained from calculating the Slovin formula. The DASS 42 questionnaires were used in this study and instruments in the Indonesian version were validated. SPSS version 21 was used for descriptive and bivariate analysis in the form of contingency coefficient analysis and Spearman correlation.

Results: The results showed that the average age was 38 years old and the average tenure was 6 years. All of the crane operators are male. In this study, it was found that most of the crane operators considered their work monotonous (75,9%). Meanwhile, work stress experienced by crane operators is dominant on a normal scale (34,5%), but other crane operators experience work stress ranging from mild to very heavy. The results also show a correlation between work monotony ($r=0.570$; $p\text{-value}=0.000$) and work stress on crane operators.

Conclusions: There are several causes of work stress. Work monotony might cause work stress. It is important for crane operators to have variation in their job and for company to arrange proper rest time so the crane operators will have enough time to rest after long work hours. In addition, the researcher also suggests to further research to be able to conduct similar research related to other factors that can cause work stress. Variables of work burnout and work variation can be variables that can be considered for further research to determine the relationship with work stress.

Keywords: Monotony, Operator, Stress

INTRODUCTION

The number of work stress is still quite high. According to survey by Labour Force Survey on 2019-2020, 828.000 cases of work stress with the prevalence of 2.440 per 100.000 workers occurred in England. The estimation of the loss caused by the cases said to be 17.9 million days loss of work (Health and Safety Executive, 2020). The number of cases said to be statistically higher than the previous period. In Indonesia, data from Riskesdas 2018 from Ministry of Health demonstrated prevalence of mental-emotional disorders on Indonesian citizens aged ≥ 15 years increased from 6% on 2013 to 9.8% (Kementerian Kesehatan RI, 2018). Even though the data isn't specifically about work stress, work stress is still a part of mental emotional disorders.

According to Handayani and Hasibuan (2018), work stress can arise due to the interaction between working conditions and the ability of workers. In addition, work stress can also arise due to job demands. World Health Organization (WHO) explained work stress might happen when workers are faced with work demands and pressure that are not matched to their knowledge and abilities (World Health Organization, 2020). If the workers can't cope, work stress might affect them badly. According to International Labor Organization (ILO), the impact of stress might vary according to the response of each individuals. Yet, high stress levels can contribute to health-related impairments and unhealthy coping behaviors (International Labour Organization, 2016).

Crane operators are workers who have the ability and skill to operate lifting and transporting instruments. Based on the research of Amalia,

Wahyuni and Ekawati (2017), the work carried out by crane operators is monotonous work where the crane operator works at a height in a sitting position and bent down, and the work carried out by the crane operator is done repeatedly. With high responsibility and workload on their job, work stress might occur. Studies had been conducted regarding work stress on crane operators. On the first study, 50% crane operators experienced moderate work stress while the rest experienced light one (Lina, 2016). The other study demonstrated that 37.8% crane operators experienced heavy work stress (Suryandari, 2017).

Monotonous work has been categorized as psychological hazard that might cause stress on workers (International Labour Organization, 2016). Monotonous work can gradually change the mental state of workers, as it might cause workers to experience boredom, laziness, and tiredness. Job dissatisfaction is also often linked with works that are monotonous (Okeafor and Alamina, 2018). According to Kedar and Ujjain (2020), one of the triggers for organizational stress is monotonous work where this involves a lack of skill utilization and variability in workload. Based on Yogisutanti et al. (2020) who conducted research on workers in textile factories, workers who did the same job and did it repeatedly without variation causes stress to the workforce. In addition, research conducted by Ibrahim, Amansyah and Yahya (2016) also stated that the longer the working period of the workforce, the routine at work will be created so that stress will arise in the workforce. This study aims to determine whether there is a relationship between work monotony with work stress of crane operators working on Nilam and Jamrud Terminals.

METHOD

This research is categorized as a quantitative study. The design of this research is cross sectional. This research is observational research because the object of research is not given any special treatments. In addition, when viewed from the nature of the problem and how the data is analyzed, this study is categorized as analytical research.

Samples

The sampling method used was random sampling, carried out in Nilam and Jamrud Terminals in Tanjung Perak Harbor, Surabaya from February 2021 to March 2021. In this study, Slovin's formula was used to determine the number of samples taken. According to the calculation, with total population of 68, the samples needed is 58. Ethical approval for this research has passed requirements at the Faculty of Dentistry, Universitas Airlangga with number 053/HRECC.FODM/II/2021.

Instrument

This research is bivariate research with independent and dependent variables. Instrument that used were Yes/No question for work monotony (Baek *et al.*, 2018) and stress scales of Depression Anxiety Stress Scale 42 (DASS 42). DASS 42 had been validated and reliability tested in the Indonesian version with the result of Alpha Cronbach's: 0,904 for DASS 42 (Kurniawan and Waluyo, 2019). The measurement of the monotony of work is done by giving questions to the respondents through a questionnaire related to the level of monotony of the respondent's work. Respondents can choose between monotonous or non-monotonous answers. Measurement of work stress is done by giving 14 questions from the DASS 42 questionnaire to the respondents. Respondents can choose the answer never, sometimes, quite often, or very often according to the respondent's condition. The scoring process for each respondent's answer is as follows:

- If the respondent's answer is "never" will be given a value of 0.
- If the respondent's answer is "sometimes" it will be given a value of 1.
- If the respondent's answer is "quite often" will be given a value of 2.
- If the respondent's answer is "often" a score will be given 3.

After the process of scoring each question, an addition will be made to determine the total score of the respondent. Based on the total score, the respondent's stress level will be classified as follows:

- A score of 0-14 indicates that the respondent does not experience stress or normal.

- A score of 15-18 indicates that the respondent experiences mild stress.
- A score of 19-25 indicates that the respondent is experiencing moderate stress.
- A score of 26-33 indicates that the respondent is experiencing severe stress.
- A score of ≥ 34 indicates the respondent is experiencing very severe stress.

Statistical Analysis

The data from study results were analyzed statistically using Windows SPSS VERSION 21. Data analysis used contingency coefficient and Spearman correlation tests with level of confidence of 95% ($\alpha = 0,05$) and statistical significance defined by a $p \leq 0,05$.

RESULT AND DISCUSSION

According to Table 1, there were 58 crane operators involved in this study. Based on Table 1, the average age of crane operator was 38 years. In addition, the average tenure of crane operator was 9 years.

Table 1. Demographic Characteristic

Variables	Mean \pm SD
Age	38,50 \pm 6,281
Tenure	9,45 \pm 4,608

Based on Table 2, the results show that as many as 44 respondents considered their work is monotonous and 14 respondents considered their work is non monotonous. From these results, it can be seen that most of the crane operators considered their work as monotonous (75.9%). As for the results of measuring work stress, respondents in this study experienced work stress with a normal scale of 20 respondents or 34,5%, followed by respondents who experienced work stress with mild scale of 18 respondents or 31%, work stress with moderate scale of 17 respondents or 29,3%, work stress with severe scale as many as 2 respondents or 3,4% and 1 respondent experiencing work stress with very severe scale or as much as 1,7%. From these results, it can be seen that work stress was dominant on normal scale, yet the rest crane operators experienced work stress, ranging from mild until very severe.

Based on table 3, the results show that as many as 7 respondents considered their work monotonous and experienced work stress on normal scale and 13 respondents considered their work non monotonous and experienced work stress on normal scale. Then, as many as 17 respondents considered their work monotonous and experienced work stress with a mild scale and 1 respondent considered their

Table 2. Research Variables

Variables	Category	Frequency (n)	Percentage (%)
Work Monotony	Monotonous	44	75,9
	Non Monotonous	14	24,1
Stress Scale	Normal	20	34,5
	Mild	18	31,0
	Moderate	17	29,3
	Severe	2	3,4
	Very Severe	1	1,7

Table 3. Correlation Between Work Monotony with Work Stress

Work Monotony Category	Stress Scale Category										r	p-value
	Normal		Mild		Moderate		Severe		Very Severe			
	n	%	n	%	n	%	n	%	n	%		
Monotonous	7	12,1	17	29,3	17	29,3	2	3,4	1	1,7	0,571	0,000
Non Monotonous	13	22,4	1	1,7	0	0	0	0	0	0		

work non monotonous and experienced work stress on a mild scale. Furthermore, as many as 17 respondents who experienced work stress on moderate scale, 2 respondents who experienced work stress on severe scale, and 1 respondent who experienced work stress on very severe scale considered their work to be monotonous. The relationship between work monotony and work stress is shown in Table 3, where there is a significant positive relationship using contingency coefficient correlation test.

This study found that most of the crane operators considered their work as monotonous. Based on research by Permatasari and Hendra (2018), monotonous work routines are associated with work stress. In addition, based on the research of Sa'idah, Ekawati and Widjasena (2018) also states that there is a significant relationship between monotonous work routines and work stress. In line with this study, another studies found most of the workers considered their work as monotonous (Perwitasari and Tualeka, 2017)(Haryanto, Septiari and Rofieq, 2020) making them feel bored easily. This study also found a positive relationship among work monotony with work stress, which is similar to another study conducted on workers of mattress factory ($p=0.000$) (Susanty, 2019).

Nowadays, a lot of work is finished by the help of machines. Working speed is increased by the help of increased automation and mechanization, which makes work feels monotonous and turns into less interesting to do. This condition happens on crane operators, where they have to sit down in static posture while doing loading/unloading activity by operating crane. The work activities of crane operators are done repeatedly, making it a monotonous work (Lina, 2016). If a worker has to do their job repeatedly without any variations or challenges, it might affect them in a bad way. According to Zulkifli, Rahayu and Akbar (2019), monotonous working conditions throughout the time and no change for workers will cause workers are

stressed. According to Pajow, Kawatu and Rattu (2020), monotonous work also can lead to boredom for workers. Workers who experience boredom will experience high work stress. Monotonous work might cause workers to experience boredom, laziness, and tiredness—which might become stressors for them.

CONCLUSION

Work stress might happen when workers are faced with work demands and pressure. In addition, work stress can occur because the workforce feels bored with repetitive work without any variation. Work stress might happen to anyone, including crane operators with their repetitive work. This study found a correlation between work monotony with work stress on crane operators. It is important for crane operators to have variation in their job and for the company to arrange proper rest time so the crane operators will have enough time to rest after long working hours. In addition, further researchers are recommended to be able to conduct similar studies to find out other factors that can cause work stress. The variables of work burnout and work variations can be considered to determine their relationship with work stress in further research.

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REFERENCE

- Amalia, N.R., Wahyuni, I. and Ekawati. (2017). 'Hubungan Postur Kerja Dengan Keluhan Kelelahan Kerja Pada Operator Container Crane PT. Terminal Peti Kemas Semarang', *Jurnal Kesehatan Masyarakat*, 5(5), pp. 290–298.

- Baek, K. *et al.* (2018). 'The Association of Workplace Psychosocial Factors and Musculoskeletal Pain Among Korean Emotional Laborers', *Safety and Health at Work*, 9(2), pp. 216–223.
- Handayani, S. and Hasibuan, L.S. (2018). 'The Analysis of Job stress Effect to the Improvement of PT Bank Muamalat Indonesia, TBK Medan Balai Kota Branch's Employees Performance', *The International Journal of Social Sciences and Humanities Invention*, 5(9), pp. 4978–4981.
- Haryanto, S., Septiari, R. and Rofieq, M. (2020). 'Analisis Tingkat Kelelahan Pada Pembatik Batik Tulis Menggunakan SOFI (Swedish Occupational Fatigue Index)', *Journal of Industrial View*, 2(2), pp. 29–35.
- Health and Safety Executive. (2020). *Work-related stress, anxiety or depression statistics in Great Britain*. Dilihat 26 Agustus 2020, dari [hse.gov.uk: http://www.hse.gov.uk/statistics/lfs/index.htm](http://www.hse.gov.uk/statistics/lfs/index.htm).
- Ibrahim, H., Amansyah, M. and Yahya, G.N. (2016). 'Faktor-Faktor yang Berhubungan Dengan Stres Kerja Pada Pekerja Factory 2 PT. Maruki Internasional Indonesia Makassar Tahun 2016', *Al-Sihah : Public Health Science Journal*, 8(1), pp. 60–68.
- International Labour Organization. (2016). *Workplace Stress: a collective challenge*. Dilihat 27 Juli 2020..
- Kedar, S.G. and Ujjain, S. (2020). 'Work Stress Among Female Cabin Crew', *International Journal of Home Science*, 6(3), pp. 136–141.
- Kementerian Kesehatan RI. (2018). Laporan Nasional RISKESDAS 2018. Jakarta: Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan.
- Kurniawan, R.D. and Waluyo. (2019). 'Pengaruh Olahraga Renang Terhadap Tingkat Stres Pada Peserta Didik Fullday School Kelas XI MIPA SMA Negeri 3 Cilacap Tahun Ajaran 2018/2019', *Jurnal Keperawatan Olahraga SMART SPORT*, 14(1), pp. 50–58.
- Lina, H.P. (2016). Analisis Stres Kerja dan Hubungannya dengan Faktor Pekerjaan pada Operator Container Crane (CC) PT. Pelindo III (Persero) Cabang Tanjung Perak. Universitas Airlangga.
- Okeafor, C.U. and Alamina, F.E. (2018). 'A Qualitative Study on Psychosocial Hazards Among Health Care Workers in a Tertiary Health Facility in South-South Nigeria', *Annals of Ibadan Postgraduate Medicine*, 16(1), pp. 23–29.
- Pajow, C., Kawatu, P.A.T. and Rattu, J.A.M. (2020). 'Hubungan Antara Beban Kerja, Masa Kerja Dan Kejenuhan Kerja Dengan Stres Kerja Pada Tenaga Kerja Area Opening Sheller PT.Sasa Inti Kecamatan Tenga Kabupaten Minahasa Selatan', *Jurnal KESMAS*, 9(7), pp. 28–36.
- Permatasari, P. and Hendra. (2018). 'Faktor-Faktor yang Berhubungan dengan Stres Kerja Pada Petugas Pemadam Kebakaran Kompi C di Kota Padang', *Jurnal Aisyah : Jurnal Ilmu Kesehatan*, 3(2), pp. 101–108.
- Perwitasari, D. and Tualeka, A.R. (2017). 'Faktor yang Berhubungan dengan Kelelahan Kerja Subyektif Pada Perawat di RSUD Dr. Mohamad Soewandhie Surabaya', *The Indonesian Journal of Occupational Safety and Health*, 6(3), pp. 365–373.
- Sa'idah, N., Ekawati and Widjasena, B. (2018). 'Faktor-Faktor Yang Berhubungan Dengan Stres Kerja Pada Staf Administrasi Ruangan di RSUD K.R.M.T. Wongsonegoro Kota Semarang', *Jurnal Kesehatan Masyarakat*, 6(2), pp. 94–102.
- Suryandari, M.U. (2017). Hubungan Shift Kerja dengan Stres Kerja pada Operator Container Crane (CC) di PT. Terminal Petikemas Surabaya. Universitas Sebelas Maret.
- Susanty, N.A. (2019). Hubungan Beban dan Rutinitas Kerja Monoton dengan Stres Kerja Pekerja Pabrik Kasur. Universitas Trisakti.
- World Health Organization. (2020). *Occupational Health: Stress at The Workplace*. Dilihat dari 15 Desember 2020, dari [who.int: https://www.who.int/news-room/q-a-detail/occupational-health-stress-at-the-workplace](https://www.who.int/news-room/q-a-detail/occupational-health-stress-at-the-workplace).
- Yogisutanti, G. *et al.* (2020). 'Relationship Between Work Stress, Age, Length of Working, and Subjective Fatigue Among Workers in Production Department of Textiles Factory', *Advances in Health Sciences Research*, 22, pp. 70–73.
- Zulkifli, Z., Rahayu, S.T. and Akbar, S.A. (2019). 'Hubungan Usia, Masa Kerja dan Beban Kerja Dengan Stres Kerja Pada Karyawan Service Well Company PT. ELNUSA TBK Wilayah Muara Badak', *KESMAS UWIGAMA: Jurnal Kesehatan Masyarakat*, 5(1), pp. 46–61