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## FAKTORS ASSOCIATED WITH UNSAFE ACTIONS ON WORKERS PRESS PART MANUFACTURING COMPANY IN TANGERANG INDONESIA

Mahiyaothrun Nadia\*<sup>1</sup>, Mugi Wahidin<sup>2</sup>, Mayumi Nitami<sup>3</sup>, Decy Situngkir<sup>4</sup>

<sup>1,2,3,4</sup> Public Health Study Program, Faculty of Health Sciences, Esa Unggul University, Jakarta, Indonesia

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### ABSTRACT

**Background:** Work accidents are still a problem in industry both in the world and in Indonesia. The cause of work accidents is 88% due to unsafe acts. This study aimed to determine the factors associated with unsafe acts in workers at the Press Part Manufacturing Company in Tangerang. **Methods:** The design used was a cross-sectional study with a sample size of 69 who were selected using the proportional stratified random sampling method. The dependent variable is unsafe acts while the independent variables include knowledge, attitudes, years of service, OSH supervision and training. Data collection uses primary data by filling out questionnaires filled out by respondents. Univariate and bivariate data analysis with Chi Square test. **Results:** Univariate and bivariate data analysis with Chi Square test. The results showed that 62.3% of workers who committed unsafe acts had high knowledge of 72.5%, had a negative attitude of 53.6%, had a new working period of 65.2%, had poor supervision of 59.4%, and 63.8% had attended K3 training. The results of the bivariate analysis showed that there was a relationship between attitude (p-value = 0.007), length of service (p-value = 0.001), and supervision (p-value = 0.046) with unsafe acts. **Conclusion:** There is a relationship between attitudes, length of service and supervision with unsafe actions

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Correspondence Author:

Mahiyaothrun Nadia,  
[mahiyaothrunnadia19@gmail.com](mailto:mahiyaothrunnadia19@gmail.com),  
Public Health Study Program,  
Faculty of Health Sciences, Esa  
Unggul University

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## INTRODUCTION

Based on International Labour Organization (2020), Accidents at work in the world reach 2.9 million, where work accidents are dominated by productive age, namely 20-25 years. This highlights the number of work accidents that occur globally. From these data, 80% of these deaths are due to work-related illnesses and 20% due to work-related injuries. In addition, there are 402 million people who experience non-fatal work injuries in the world. This shows that the safety, health and condition of workers is very important.

Work accidents in Indonesia are also still high. Based on data from the center Kementerian Kesehatan RI (2015), the highest number of work-related accident cases occurred in 2013, namely 35.917 work-related accident cases. In 2014 there were 24.910 cases of work accidents in Indonesia.

The main factors of accidents are caused by human factors and unsafe conditions due to lack of discipline in the work environment, tools/machines and bad environment. According to research National Safety Council (2011), that the cause of work accidents was 88% due to unsafe behavior, 10% due to unsafe conditions and 2% had no known cause. Unsafe acts are dangerous actions by workers caused by several factors, one of which is internal factors such as unsafe attitudes and behavior in the workplace, lack of knowledge and skills, working in jest, not wearing Personal Protective Equipment (PPE), putting items and work tools that are not right, work that is not in accordance with procedures, fatigue and boredom. (Suma'mur, 2013).

Unsafe acts usually occur because of the physical imbalance of the workforce and lack of education. In addition, unsafe actions are also influenced by individual factors as well as work factors. Individual factors are internal factors that come from the man himself which can cause a work accident. Factors that influence individual factors, namely, knowledge, attitudes and motivation. While work factors are external factors where these factors can support workers in carrying out

their work, one example is the organization in the workplace, namely, commitment or participation from management or company leaders in efforts to implement K3, such as supervision, availability of Personal Protective Equipment (PPE) and K3 training (Irzal, 2016).

DNP company is a company in the field of autoparts manufacturing that specializes in filters which include air filters, oil filters, water separator fuel filters for automotive. PT Duta Nichirindo Pratama has received ISO 9001:2015 Quality Management System certification and ISO 14001:2015 Environmental Management System certification. One of the production department at PT. DNP is part of Press Part Manufacturing. The Press Part Manufacturing section consists of welding parts (Welding), making metal pieces with the desired shape (Stamping) and also making threads (Tapping).

Based on the P2K3 work accident data report, (2021) due to unsafe actions by workers in the Press Part Manufacturing section at PT. DNP from 2019-2021, that is, in 2019 there were unsafe actions that caused accidents at work, there were 16 cases consisting of scratches, machine squeezing, bounces, material bouncing, chemical splashes and punctured scrap. In 2020 there were also 16 cases consisting of scratched cases, squashed by machines, hit by tools and punctured by scarp. Then in 2021 there were 12 cases consisting of scratched end plates, pinched by material hit by tools and punctured by scrap. In these cases 100% occur due to unsafe acts on workers.

The production work process, especially in the Press Part Manufacturing section, works in shifts within 24 hours, which are divided into 3 shifts. Then PT. Duta Nichirindo Pratama has established an OHS policy in all parts, especially the Press Part Manufacturing section to be implemented by workers, where workers are required to use Personal Protective Equipment (PPE) such as gloves, safety shoes, hats and masks that have been provided by the company. However, in reality workers perform unsafe actions that can lead

to accidents. The impact on the company due to unsafe actions is a decrease in productivity in the production area, especially in the Press Part Manufacturing section. Ambassador of Nichirindo Tangerang City in 2022.

Therefore, the objective study was to determine the factors associated with unsafe acts in workers at the Press Part Manufacturing Company in Tangerang.

## METHODS

This study used a quantitative approach with a cross-sectional study design. The dependent variables studied were unsafe acts and the independent variables in this study were knowledge, attitudes, years of service, OSH supervision and training.

The population in this study were all workers in the Press Part Manufacturing PT. DNP Tangerang City in 2022, totaling 144 people, of which 25 people have been taken for the purposes of validity testing and a population of 119 people. The sample in this study used the proportional stratified random sampling method, namely by taking samples from each sub-population totaling 69 respondents, namely the Welding section 20 respondents, Stamping 27 respondents and Tapping 22 respondents.

The study was conducted in August-October 2022. Data collection with primary data using a questionnaire filled out directly by respondents where data collection was carried out during shift 1 work hours, namely 16:00 and shift 2 entry hours, namely 15:30 and the questionnaire was valid in validity tests and reliability tests on 25 respondents. The research data conducted normality tests on the variables of unsafe actions, knowledge, attitudes and supervision to determine the cut of point.

The variables of unsafe action and knowledge are not distributed normally so that the cut of point uses a median value of 5.00 insecure actions and knowledge of 9.00, while in the normal distributed attitude and supervision variables so that the cut of point uses a mean value of 24.46 and supervision of 24.52. In the variable period of work and training has its own category, the period of service has a category, namely the new period of service if less than 2 years and the long service period > 2 years, then K3 training has a category of ever, if you have attended training at least 1 time and never if never attended training.

The data analysis used in this study is

univariate and bivariate analysis. Univariate analysis aims to describe or describe the characteristics of each research variable, then it is presented in the form of a frequency distribution table. Bivariate analysis was performed to see the relationship between independent variables and dependent variabel using the Chi Square test. This research has passed the requirements for ethical review with the number: 0922-12.007 /DPKE/FINAL-EA/UEU/XII/2022.

## RESULTS

Based on the results of univariate analysis research on the variables of unsafe actions, knowledge, attitudes, length of service, supervision and K3 training can be seen as follows.

**Table 1**  
Distribution of Frequency of Unsafe Actions, Knowledge, Attitudes, Working Period, K3 Supervision and Training in Press Part Manufacturing Workers PT. DNP Tangerang City In 2022

Variables	Frequency (n)	Percentage (%)
No Action Safe		
1. Insecure	43	62.3
2. Secure	26	37.7
Knowledge		
1. Low	19	27.5
2. High	50	72.5
Attitude		
1. Negative	37	53.6
2. Positive	32	46.4
Service Life		
1. < 2 years	45	65.2
2. ≥ 2 years	24	34.8
Supervision		
1. Less good	41	59.4
2. Good	28	40.6
Occupational Safety and Health Training		
1. Never	25	36.2
2. Ever	44	63.8

Based on Table 1, it is known that in 69 respondents, the highest proportion was observed, namely unsafe actions of 62.3%, high knowledge of 72.5%, negative attitudes of 53.6%, new work periods of 65.2%, poor supervision of 59.4% and having attended K3 training of 63.8%.

**Table 2**

The Relationship Between K3 Knowledge, Attitudes, Length of Service, Supervision and Training with Unsafe Actions in Press Part Manufacturing Workers PT. DNP Tangerang City in 2022

Variables	Unsafe Action					
	Not Safe		Safe		p value	PR (95% CI)
	n	%	n	%		
Knowledge						
1. Low	9	47.4	10	52.6	0.193	0.697 (0.418- 1.161)
2. High	34	68	16	32		
Attitude						
1. Negative	29	78.4	16	21.6	<b>0.007</b>	1.792 (1.168- 2.748)
2. Positive	14	43.8	18	56.2		
Years of Service						
1. < 2 years	35	77.8	10	22.2	<b>0.001</b>	2.333 (1.297- 4.196)
2. ≥ 2 years	8	33.3	16	66.7		
Supervision						
1. Less Good	30	73.2	11	26.8	0.046	1.576 (1.016- 2.444)
2. Good	13	46.4	15	53.6		
Occupational Safety and Health Training						
1. Never	19	76	6	24	0.131	1.393 (0.984- 1.974)
2. Ever	24	54.5	20	45.5		

Based on Table 2, it is known that there is no relationship between knowledge and unsafe actions in workers of the Press Part Manufacturing section of PT. NDP Tangerang City in 2022 (p-value 0.193).

There is a relationship between attitudes and unsafe actions in the workers of the Press Part Manufacturing section of PT. NDP Tangerang City in 2022 (p-value 0.007). From the results of the analysis, it was found that the Prevalence Ratio (PR) value of 1.792 (95% CI = 1.168-2.748) means that workers who have a negative attitude are at 1,792 greater risk of taking unsafe actions compared to workers who have a positive attitude.

There is a relationship between the kerja period and the unsafe actions of the Press Part Manufacturing PT. NDP Tangerang City in 2022 (p-value 0.001). From the results of the analysis, it was found that the Prevalence Ratio (PR) value was 2.333 (95% CI=1.297-4.196), meaning that workers with new working periods were at

2,333 greater risk of committing unsafe actions compared to workers who worked for a long time. There is a relationship between supervision and unsafe actions on workers of the Press Part Manufacturing section of PT. NDP Tangerang City in 2022 (p-value 0.046). From the results of the analysis, it was found that the Prevalence Ratio (PR) value was 1.576 (95% CI = 1.016-2.444), meaning that workers with poor supervision were at 1,576 greater risk of carrying out unsafe actions compared to workers who were well supervised.

There is no relationship between K3 training and unsafe actions on press part manufacturing workers of PT. NDP Tangerang City in 2022 (p-value 0.131). From the results of the analysis, it was found that the Prevalence Ratio (PR) value was 1.393 (95% CI=0.985-1.974), meaning that workers who participated in the K3 transition could be at risk of 1.393 for perform unsafe actions.

## DISCUSSION

The results of the study showed unsafe actions on workers of the Press Part Manufacturing section of PT. NDP Tangerang in 2022 with a magnitude of 62.3%. This is in line with the research Husna (2020) a company in PT. X DKI Jakarta stated that the highest proportion of workers who committed unsafe acts was 52.8%. Likewise, research Ismawati (2021) at the company in PT. Port of Indonesia IV (PERSERO) Makasar Branch which showed unsafe actions by 55.7%.

Unsafe actions are factors related to human actions in doing work in industry. Unsafe actions are the cause of workplace accidents. Unsafe actions are also actions that deviate from the correct work procedures or procedures according to mutual consent so that the actions taken contain danger and may pose a risk of injury or accident (Akhsary, 2017). Unsafe actions, both consciously and unconsciously carried out by workers, have a detrimental impact, both for the company and the workers themselves. One example of the impact of unsafe actions that harm workers is the sanction of violating the rules set by the company and being exposed to potential dangers. Then one example of the impact of unsafe actions that the company has caused is the increasing number of work accidents in the company and also experiencing losses due to damage to work equipment (Larasti et al., 2022).

Based on the results of the questionnaire of unsafe actions given to workers who are most or often carried out by workers, namely workers who do their work in a hurry so that their work is quickly completed by 60.8%, working in a state of fatigue as large as 63.8%, working with a sleepy condition of 60.8%, working without concentration by 52.2%, not wearing Personal Protective Equipment (PPE) at 56.5%, and the last most common practice by workers was working while chatting or joking at 50.7%.

Based on the results of this study, it is recommended that the K3 Supervisory Committee (P2K3) in the company needs to increase supervision to workers, so that it is

always monitored and also monitors the implementation of special policies related to workplace hazards, so that workers take safe actions in the workplace.

The results showed that the knowledge of the Press Part Manufacturing section workers of PT. Nichirindo Pratama Ambassador of Tangerang City in 2022 is 72.5%. This is in line with the research Basvi (2018), in a Cengkareng-Batuceper-Kunciran Toll Road Work Project stated that the highest proportion of workers who have good knowledge was 64,7%.

In the bivariate test results, it was found that there was no relationship between knowledge and unsafe actions in workers of the Press Part Manufacturing PT. Ambassador of Nichirindo Pratama. This is in line with the research Listyandini dan Suwandi (2019), That there is no significant relationship between knowledge and unsafe actions on workers at NPK fertilizer plants. Likewise by research Basvi (2018), that there is no connection between knowledge and unsafe actions on workers of the Cengkareng – Batu Ceper – Kunciran toll road work project. Later strengthened by research Nagara (2017), said there was no connection between knowledge and unsafe actions on officers at private clinic X.

The knowledge that a person has is a factor that plays a role in interpreting the stimulus obtained. Lack of knowledge can lead to insecure actions. Knowledge is very important given before an individual or worker performs an action. One of the causes of work accidents is unsafe actions caused by lack of knowledge and skills. Knowledge is the oemberian of evidence from a person through the process of warning and enacting information and ideas that have been obtained previously (Notoadmodjo, 2013).

The absence of a relationship between knowledge and insecure indakan is likely due to the knowledge of workers in PT. Nichirindo Pratama ambassadors are already good. Workers already know the meaning of unsafe actions, what are the dangerous activities, what procedures must be followed in the work environment and work positions that must be

avoided.

The results showed that the attitude of the Press Part Manufacturing workers of PT. Nichirindo Pratama Tangerang City Ambassadors in 2022 are workers who have a negative attitude of 53.6%. This is in line with the research Fajri (2021), at a company in PT. X DKI Jakarta that the highest proportion of workers who have a negative attitude is 71.4%.

In the results of the bivariate test, it was found that there was a relationship between attitudes and unsafe actions in the workers of the Press Part Manufacturing section of PT. Ambassador of Nichirindo Pratama. The prevalence ratio (PR) of attitudes towards unsafe actions in Press Part Manufacturing workers is 1,792 (95% CI =1,168-2,748) which means that workers who have a negative attitude are at 1,792 times greater risk of committing unsafe actions compared to workers who have a positive attitude.

Attitude is the result of socialization where a person will give a reaction according to his stimulation. One of the social psychologists, Newcomb, stated that attitude is a readiness or willingness to act and is not an executor of certain motives. This is because there are many factors that affect attitudes that make workers have positive and negative attitudes (Notoadmodjo, 2013).

Based on the results of discussions with general K3 experts, it can be found out at PT. Duta Nichirindo has no program that overcomes negative attitudes. Then the mandatory use of Personal Protective Equipment (PPE) such as gloves and ear plugs has not been maximized because workers only use as necessary because workers consider that this interferes with comfort.

Advice from researchers, the K3 Supervisory Committee (P2K3) needs to install a mandatory area banner using Personal Protective Equipment (PPE) or posters about work procedures so that workers can work properly and safely.

The results showed that the service period in the Press Part Manufacturing section workers of PT. Ambassadors of Nichirindo Pratama Kota Tangerang in 2022 are workers who have a new work period of < 2 years of

65.2%. This is in line with the research Johannes (2018), at a company in PT X Tangerang that the highest proportion of workers who have a period of work is at risk of 57.5%.

In the results of the bivariate test, it was found that there was a relationship between the period of work and unsafe actions in the workers of the Press Part Manufacturing section of PT. Duta Nichirindo Pratama Prevalence Ratio (PR) of service to unsafe actions in Press Part Manufacturing workers is 2,333 95% CI=1,297-4,196) which means that workers who have a new period of work are at 2,333 times greater risk of committing unsafe actions compared to workers who have a long service life.

The period of service is the accumulated time the worker performs his work. Working period has to do with satisfaction in work which continues to increase until the length of work is 5 years. Then it decreased until the 8-year service period, but after the eighth year it slowly began to increase again. New workers will be more prone to accidents than old employees. The longer the employee works, the more experience they will gain until they are safety conscious (Soedirman, 2014).

Based on the results of discussions with general k3 experts PT. Duta Nichirindo Pratama that workers whose work period < 2 years still lack concern about the dangers and risks in the workplace. And the lack of guidance from seniors.

Advice from researchers, new workers need to be given education and also guidance from seniors in the workplace regarding the duties and responsibilities of the work done. The better the new worker understands and gets to know his job, the worker will begin to behave safely.

The results showed that the supervision of the workers of the Press Part Manufacturing section of PT. Ambassadors of Nichirindo Pratama Kota Tangerang in 2022 are workers who have poor supervision of 59.4%. This is in line with the research Larasti et al., (2022), at a company in PT. X that the highest proportion of poorly supervised workers was 60.2%.

In the bivariate test results, it was found that there was a relationship between supervision and unsafe actions in workers of the Press Part Manufacturing section of PT. Duta Nichirindo Pratama Prevalence Ratio (PR) supervision of unsafe actions on Press Part Manufacturing workers was 1,576 (95% CI=1,016-2,444) which means that workers who have poor supervision are at 1,576 times greater risk of committing unsafe actions compared to workers who have good oversight.

Supervision (controlling) is the activity of controlling the workforce in order to comply with organizational regulations and work according to plan. Good supervision can identify safe work activities, and vice versa. Therefore, supervision must be carried out periodically or as often as possible so that unsafe actions can be noticed and repairs can be made. Supervision is an important function in activity management so that the activities carried out can run as expected, so that the goals of the activity can be achieved effectively and efficiently. In an effort to realize work safety and safety, it is necessary to carry out incentive supervision from various internal and external parties of the company. Supervision of occupational safety and health is carried out from the scale of the enterprise, the scale of workers to all equipment and means of production in the product process (Suryanto dan Widjati, 2017).

Based on the results of an interview with a general K3 expert PT. Duta Nichirindo Pratama Kota Tangerang that there is still weak supervision in the workplace because the K3 patrol program that was made was not implemented, it is considered that supervision already exists in every part.

Advice from researchers, the K3 Supervisory Committee (P2K3) company needs to increase the K3 patrol program regularly. This is so that workers can comply with existing rules or regulations. Supervisors can also sanction workers who commit dangerous or wrong acts in carrying out their work while K3 supervision or patrols are running.

The results showed that K3 training for

Press Part Manufacturing workers of PT. The 2022 Nichirindo Pratama Tangerang City Ambassador is a 63.8% worker who has attended K3 training. This is in line with the research Salim (2018), in a company in the Indopora Construction Project East 8 Cibubur East Jakarta that the highest proportion of workers who followed the training was 75.4%.

In the bivariate test results, it was found that there was no relationship between K3 exercises and unsafe actions on press part manufacturing workers of PT. Ambassadors of Nichirindo Pratama

Training is a short-term process that uses systematic and organized procedures in which non-managerial employees learn technical knowledge and skills in limited objectives. Training consists of programs that are structured with plans to improve the performance of workers at the individual, group and organizational levels. Improving performance can be measured by the knowledge, skills, attitudes and social behaviors of the workers themselves. Training can help workers to do their current job, and training can also provide career path benefits for workers. Through the training held, it is hoped that it will bring a change in knowledge, skills, attitudes and behaviors that will continue to increase and be owned by each worker by being able to realize the goals to be achieved by an organization or company in fulfilling the desired human resource standards (Meliza, 2018).

The absence of a link between K3 training and Unsafe action is likely because the company provides K3 assembled training to workers, especially workers who operate certain machines. Then there are also workers who have attended K3 training at the previous place of work.

## CONCLUSION

The conclusion of this study is based on univariate analysis is known to be unsafe in workers of the Press Part Manufacturing section of PT. Nichirindo Pratama Ambassador of Tangerang City in 2022 is 62.3%. Pengetahuan is mostly high category (72.5%). Most of the captives were categorized as poor (53.6%). The length of service is mostly new (65.2%). Oversight was largely poor (59.4%). K3 training is mostly well categorized (63.8%). Based on the results of the bivariate analysis, there is a relationship between attitudes, length of service and supervision with unsafe actions, while there is no relationship between K3

knowledge and training with unsafe actions in workers of the Press Part Manufacturing PT. Ambassador of Nichrindo Pratama Kota Tangerang in 2022.

The K3 Supervisory Committee (P2K3) needs to monitor the implementation of special policies related to workplace hazards, so that workers take safe actions in the workplace. The company's education training team needs to create a K3 material program related to continuous implementation which was delayed. The education training team in the company needs to set up a K3 training system where every worker finishes doing their work or before the worker does his job. The K3 Supervisory Committee (P2K3) needs to install a banner area that must use Personal Protective Equipment (PPE) or posters about work procedures so that workers can work properly and safely. New workers need to be given education and guidance from seniors in the workplace about duties and responsibilities because the better new

## REFERENCES

- A, R. A. A. (2017) "Faktor Unsafe Action (Perilaku Tidak Aman) Pada Pekerja Kontruksi Proyek Pembangunan Rumah Bertingkat Oleh PT. Jader Cipta Cemerlang Makassar Tahun 2017," Universitas Islam Negeri Alauddin Makassar, 549, hal. 40–42.
- Basvi, S. D. (2018) "Faktor-faktor yang Berhubungan dengan Tindakan Tidak Aman Pada Pekerja Proyek Pekerjaan Jalan Tol Cengkareng-Batuceper-Kunciran Tahun 2018," Kesehatan Masyarakat, Universitas Esa Unggul. Tersedia pada: [https://digilib.esaunggul.ac.id/UEU-Undergraduate-20160301377\\_/12727/faktor-yang-berhubungan-dengan-tindakan-tidak-aman](https://digilib.esaunggul.ac.id/UEU-Undergraduate-20160301377_/12727/faktor-yang-berhubungan-dengan-tindakan-tidak-aman).
- Endriastuty, Y. dan Adawia, P. R. (2018) "Analisa Hubungan Antara Tingkat Pendidikan, Pengetahuan Tentang K3 Terhadap Budaya K3 Pada Perusahaan Manufactur," Jurnal Ecomedica, vol 2. No.
- Fajri, S. A. (2021) "Faktor-faktor yang Berhubungan dengan Tindakan Tidak Aman (Unsafe Action) Pada Pekerja di PT. X DKI Jakarta Tahun 2021," Kesehatan Masyarakat, Universitas Esa Unggul. Tersedia pada: <https://digilib.esaunggul.ac.id/UEU-Undergraduate-201703010800/22925/tindakan-tidak-aman>.
- Husna, I. N. (2020) "Faktor-faktor yang Berhubungan dengan Tindakan Tidak Aman (Unsafe Action) Pada Pekerja Mekanik PT. X Jakarta Tahun 2020," Kesehatan Masyarakat, Universitas Esa Unggul. Tersedia pada: <https://digilib.esaunggul.ac.id/UEU-Undergraduate-20180301121/19803/faktor-yang-berhubungan-dengan-tindakan-tidak-aman>.
- International Labour Organization (2020) "Meningkatkan Keselamatan dan Kesehatan Pekerja." Tersedia pada: <https://ilo.org>.

workers understand and get to know their work, the workers will start to behave safely. The K3 Supervisory Committee (P2K3) in the company needs to increase the K3 patrol program periodically. This is so that workers can comply with existing rules or regulations, so that workers can behave safely safely.

## CONFLICT OF INTEREST

The authors declare that they have no conflict of interests.

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- Irzal (2016) Dasar-dasar Kesehatan dan Keselamatan Kerja. Edisi Pert. Jakarta: Kencana.
- Ismawati (2021) “Faktor Yang Berhubungan Dengan Tindakan Tidak Aman (Unsafe Action) Pada Pekerja Bongkar Muat di PT. Pelabuhan Indonesia IV (PERSERO) Cabang Makassar.”
- Johannes, F. (2018) “Faktor-faktor Yang Mempengaruhi Perilaku Tidak Aman Pada Pekerja Assembling PT. X Tangerang Tahun 2018.”
- Kementerian Kesehatan RI (2015) Profil Kesehatan Republik Indonesia. Jakarta.
- Larasti, A. et al. (2022) “Faktor-faktor yang Berhubungan dengan Tindakan Tidak Aman (Unsafe Action) Pada Pekerja Produksi PT. X,” *Environmental Occupational Health and Safety Journal*, 2 No. 2.
- Listyandini, R. dan Suwandi, T. (2019) “Faktor yang Berhubungan dengan Tindakan Tidak Aman Pada Pekerja di Pabrik Pupuk NPK,” *Kesehatan Masyarakat*, Vol. 7.
- Meliza, F. (2018) “Faktor yang Berhubungan dengan Tindakan Tidak Aman pada Pekerja Bagian Pelayanan Teknik PT. PLN (Persero) Bukittinggi Tahun 2018,” Universitas Sumatra Utara.
- Nagara, B. B. (2017) “Faktor-faktor yang Berhubungan dengan Tindakan Tidak Aman Pada Petugas Laboratorium Di Klinik Swasta X tahun 2017.”
- National Safety Council (2011) *Injury Fact. 2011 Editi*. Itasca, IL: Authors.
- Notoadmodjo, S. (2013) *Kesehatan Masyarakat Ilmu dan Seni*. Jakarta: Rineka Cipta.
- P2K3 (2021) *Laporan Data Kecelakaan Kerja PT. Duta Nichirindo Pratama*. Kota Tangerang.
- Salim, M. M. (2018) “Faktor-faktor yang Berhubungan dengan Perilaku Tidak Aman Pada Pekerja Kontruksi Indopora Proyek East 8 Cibubur Jakarta Timur,” *Ilmiah Kesehatan*, 10 (2). Tersedia pada: <http://journal.thamrin.ac.id/index.php/JIK/article/view/183>.
- Soedirman dan Suma'mur (2014) *Kesehatan Kerja Dalam Perspektif Hiperkes & Keselamatan Kerja*. Jakarta: Erlangga.
- Suma'mur (2013) *Higiene Perusahaan dan Kesehatan Kerja (Hiperkes)*. Jakarta: Sagung Seto.
- Suryanto, D. I. D. dan Widjati, N. (2017) “Hubungan Karakteristik Individu dan Pengawasan K3 Dengan Unsafe Action Tenaga Kerja Bongkar Muat,” *The Indonesian Journal of Public Health*, Vol. 12 No.
- Untari, L. D. (2021) “Faktor-faktor yang Berhubungan dengan Perilaku Tidak Aman Pada Karyawan Departemen Produksi di PT. X Jakarta Tahun 2021,” *Kesehatan Masyarakat, Universitas Esa Unggul*. Tersedia pada: <https://digilib.esaunggul.ac.id/UEU-Undergraduate-20160301435/22491/tindakan-tidak-aman>.