

Analysis Of The Relationship Between The Use Of Personal Protective Equipment, Knowledge And Workplace Accidents In Employees ATPTPAJ In 2022

Kenvin Rusli(1), Vitrilina Hutabarat(2), Peny Ariani(3)

(1)(2)(3)(4)(5)(6)Institut Kesehatan Deli Husada Deli Tua

ken_r92@yahoo.com (1), vitrilinahutabarat@gmail.com (2), penyariani@gmail.com (3)

ABSTRAK

Kecelakaan kerja adalah kecelakaan yang terjadi yang berhubungan dengan hubungan kerja. Kecelakaan kerja secara umum dapat disebabkan oleh dua hal pokok, yaitu perilaku kerja yang tidak aman (*Unsafe Act*) dan kondisi kerja yang tidak aman (*Unsafe Condition*). Alat Pelindung Diri (APD) adalah alat yang mempunyai kemampuan untuk melindungi seseorang dalam pekerjaan yang fungsinya mengisolasi tubuh tenaga kerja dari bahaya di tempat kerja. Penelitian ini menganalisis hubungan antara penggunaan APD, pengetahuan dengan kejadian kecelakaan kerja pada karyawan Di PT. PAJ Kota Banyuasin Sumatra Selatan Tahun 2022. Penelitian ini menggunakan desain penelitian *Analitik Observasional* dengan pendekatan *Cross Sectional*. Jumlah responden sebanyak 68 orang yang bekerja sebagai karyawan di PT. PAJ. Hasil: Kategori umur responden yang memiliki umur minimal 20 tahun, maksimal 55 tahun dan rata-rata umur responden 25 tahun. Terdapat hubungan antara pengetahuan dengan kejadian kecelakaan kerja pada karyawan di PT. PAJ Kota Banyuasin Sumatra Selatan. Diharapkan kepada seluruh karyawan agar tetap selalu memiliki komitmen dalam penerapan SOP yang benar dalam bekerja terutama dalam penggunaan APD sehingga kecelakaan kerja tidak terjadi.

Kata Kunci : Alat Pelindung Diri (APD), Pengetahuan, Kejadian Kecelakaan Kerja (K3)

ABSTRACT

A work accident is an accident that occurs that is related to an employment relationship. The employment relationship here can mean that the accident occurred due to work or while carrying out work. Work accidents in general can be caused by two main things, namely unsafe work behavior (*Unsafe Act*) and unsafe working conditions (*Unsafe Condition*). Personal Protective Equipment (PPE) is a tool that has the ability to protect a person in a job whose function isolates the worker's body from hazards in the workplace. This study analyzes the relationship between the use of PPE, knowledge and the incidence of work accidents in employees at PT. PAJ Banyuasin City, South Sumatra in 2022. This study uses an Observational Analytical research design with a Cross Sectional approach. An overview of the results of the research in general is the number of respondents as many as 68 respondents who work as employees at PT. PAJ. For the age of respondents who have a minimum age of 20 years, the maximum age is 55 years and the average age of respondents is 25 years. There is a relationship between knowledge and the incidence of work accidents in employees at PT. PAJ Banyuasin City, South Sumatra. It is hoped that all employees will always be committed to the correct implementation of SOPs at work, especially in the use of PPE so that work accidents do not occur.

Keywords: Personal Protective Equipment (PPE), Knowledge, Work Accident Incidents (K3).

I. PENDAHULUAN

1. Latar Belakang

Basically man is productive creatures , because they own each person's potential that can utilized For success something for others, productivity Work will awake if No There is conditions that affect like accident work (Mahwati , et al , 2021). Protective Equipment (PPE) is a tool that has ability For protect somebody in work that functions isolate body power Work from danger in place work (Depnaker , 2006 in Yulianto, 2020). According to Soeripto (2008) in Yulianto (2020), stated there are two groups big for PPE namely tool protector self first used For effort prevention to accident work , and is called tool protector industrial safety (used For protection all over body , tool protector self both used For prevention to Health disorders (the emergence of disease), called tool industrial health protector . *World Health Organization* (WHO) data for 2016, every year around 1.1 million worldwide deaths caused Because disease or accident related with jobs . The figure is equivalent with 5,000 workers per day or 3 people each the minute died , impact negative from work is accident work . Estimated amount power Work on 35-50 % of workers in the world are exposed danger physical , chemical , biological and working in burden Work physical and ergonomic that exceeds its capacity including the burden Work psychological . Based on statistics from the International Lanour Office, there are 120 million accident Work happen every know on the spot work all over the world (Dwijayanti , 2018). One of companies that implement use tool protector the self in the Banyuasin City area , South Sumatra is PT. PAJ which is engaged in in the field mine oil and gas, thermal power plants, and renewable energy , PT . PAJ was established in 2007 , this company own employee as many as 130 people were divided in 18 divisions . From the results of the researcher's pre-survey on January 3 , 2023, the author do observation diarrhea company , which can cause risk in accident Work diarrhea mining is , there is use tool heavy at the moment drilling oil at risk to injure part body or head If No use helmet safety , splash stone fragments at the time drilling oil in progress can at risk caught eye If worker No use safety eyes , voice noise generated can damage hearing If often exposed , and the need for use shoe safety to avoid from stabbed or hit by object weight that can at risk the occurrence accident work . From the many use tool heavy at the moment work and very challenging threshold area matter this is what makes writer For interested do study related about “ Analysis Relationship Between PPE Use , Knowledge and Attitude With Incident Accident Employment for Employees at PT. PAJ Banyuasin City, South Sumatra in 2022”.

2. Perumusan Masalah / Problem Formulation

The formulation of this research is how to analyze self-protection, knowledge and work accidents in ATPTPAJ Employees in 2022

3. Tujuan Penelitian / Problem objectives

The aim is to obtain research results from these 3 factors to be able to draw conclusions from the research entitled On ATPTPAJ Employees in 2022

4. Manfaat Penelitian / Research Benefits

The benefits of this research are to provide important information for the public and especially employees that the importance of analyzing self-protection, knowledge and work accidents in ATPTPAJ Employees in 2022

II. METODE PENELITIAN / RESEARCH METHODS

This research uses design study *Analytic Observational* with approach *Cross Sectional*, type This research has objective For find There is or No existence meaningful relationship between variables. Research *Cross Sectional* is a study For learn dynamics correlation between factors risk with effect, with method approach, observational, or data collection. Research *Cross Sectional* only to observe very only and measurement done to variable subject at the time study. In this study, large sample set based on formula big sample For study *Cross Sectional* use formulation slovin like below this:

$$n = \frac{N}{1 + N(e)^2}$$

Information :

n = Size sample / quantity Respondent

N = Size population

E = Percentage leniency accuracy error taking samples that are still Can tolerated ; e=0.05

$$n = \frac{130}{1 + 130 (0,05)^2}$$

$$n = \frac{130}{1 + (130 \times 0,0025)}$$

$$n = \frac{130}{1,325} = 98,11$$

Based on the calculation above is large samples used in the study as many as 98.11 people and rounded up to 99 respondents, this research is all employee PT. PAJ Banyuasin City South Sumatra. Subject study taken with technique *Consecutive Sampling*. *Consecutive sampling* is method taking sample conducted with method choose samples that have been fulfil criteria study until period time certain so that Friday sample fulfilled (Mudifa, 2017) with criteria inclusion and exclusion as following :

- a. Criteria inclusion
 - Working in the section field
- b. Criteria exclusion
 - Employees who are currently Sick
 - Security, Cleaning Service

Results in the field researcher only to obtain sample as many as 68 employees, this is due to Because drilling oil at the time study only done only 4 times so that, at the time study employees of the PT currently standby period, so amount employees on duty in the field only totaling 68 people.

III. HASIL DAN PEMBAHASAN / RESULT AND DISCUSSION

Results overview study in a way general amount Respondent as many as 68 respondents were working as employees at PT. PAJ. For age respondents who have minimum age 20 years, age maximum 55 years and average age respondents 25 years old. Gender respondents of various types sex man as many as 61 people (89.7%) and who have type sex Woman as many as 7 people (10.3%). And for length of work < 1 year, 11 people (16.2%), 1-3 years as many as 8 people (11.8%), and those > 3 years as many as 49 people (72.1%). Whereas For Respondents' education level is the one who has Elementary school

education level as many as 8 people (11.8%), junior high school as many as 2 people (2.9%), high school as many as 35 people (51.5%), and bachelor's degree as many as 23 people (33.8%)..

Table 1 Frequency Distribution of Research Variables

Variables	Frequency	Percentage
Use of PPE		
Using PPE	46	67.6%
Not Using PPE	22	26.1%
Total	68	100%
Level of Knowledge		
Good	45	66.1%
Not good	23	33.8%
Total	68	100%
Incident accident		
Never	43	63.2%
Once	25	36.8%
Total	68	100%

Based on table 4.1 above from amount Respondent as many as 68 employees at PT. XYZ were obtained results as many as 47 person respondents (69.1 %) who used PPE and as many as 21 person respondents (30.9 %) who did not Using PPE. For variable knowledge obtained results as much as 45 person respondents (66.2 %) who have level his knowledge is good and as much as possible 23 people respondents (33.8 %) who have knowledge not enough Good .

Table 2 Relationships between Use of PPE with incident accident work on employees at PT. PAJ Banyuasin City South Sumatra

Variable Use of PPE	Incident Accident Work				Total		p	PR	95% CI	
	Once		Never						Low	Up
	f	%	f	%	f	%				
Do not use	13	59.1	9	40.9	22	100	0.018	1,807	1,397	11.99
Use	12	26.1	34	73.9	46	100				

Based on table 4.2 is obtained results that are not 22 people used PPE experience accident 13 (59.1%) and no experience accident as many as 9 (40.9%) and 46 people who had used PPE experience accident 12 (26.1%) and no Once experience accident as many as 34 (73.9%), meaning respondents who do not using estimated PPE the risk experience accident Work by 1,807 times, compared to with respondents who use PPE.

Table 3 Relationships between Knowledge with Incident Accident work on employees at PT. PAJ Banyuasin City South Sumatra

Variable Knowledge	Incident Accident Work				Total		p	PR	95% CI	
	Once		Never						Low	Up
	f	%	f	%	f	%				
Kurang Baik	14	60,9	9	39,1	23	100	0,004	1,931	1,635	14,139

Baik	11	24,4	34	75,6	45	100			
-------------	----	------	----	------	----	-----	--	--	--

Based on table 4.3 is obtained results that have knowledge not enough Good as many as 23 people who have experience 14 (60.9%) accidents and those that did not experience accident as many as 9 (39.1%). Meanwhile, those who have knowledge Good as many as 45 people, who have experience accident as many as 11 (24.4%). who does not Once experience accident as many as 34 (75.6%). This means respondents who have knowledge not enough estimation the risk experience accident Work by 1,931 times compared to with respondents who have knowledge Good .

Table 4 Results of Logistic Regression Analysis Stage 1
Analysis Connection between Use of PPE, Knowledge and Attitudes with Incident Accident Work at PT. PAJ

Variables Free	<i>p-value</i>	PR	95% CI	
			<i>Lower</i>	<i>Upper</i>
Compliance	0.060	3,244	0.950	11,070
Knowledge	0.007	5,349	1,592	17,963

Based on Table 4.5 it shows existence mark $p\text{-value} > 0.05$, namely on the variable compliance . So that the variable the must issued Formerly Then continued to stage 2, where at stage the show order variable which independent is the most influential ? in a way dominant to variable dependent .

Table 5 Results of Logistic Regression Analysis Stage 2
Analysis Connection between Knowledge and Attitude with Incident Accident Work at PT. PAJ

Variables Free	<i>p-value</i>	PR	95% CI	
			<i>Lower</i>	<i>Upper</i>
Compliance	0.005	5,363	1,659	17,333

Based on from Table 4.6 above show that variable knowledge own mark $p\text{-value}$ of 0.005
Based on results research conducted in the field obtained results analysis univariate obtained amount employee majority Already using PPE as many as 46 (67.6%). The most important safety equipment used at the time working in the mining area is use of Personal Protective Equipment (PPE), PPE itself is requirements that must be met complied with by workers mining at the moment do work said , the importance of use of PPE on employees For prevent or minimize incident accident work at the moment in place Work .According to Bloom's Theory in Notoatmodjo (2010), knowledge somebody worker in use tool protector self must tall Because level knowledge about tool protector self expected own behavior appropriate when use tool protector myself . according to is ability self somebody For understand something after interact with its environment .This is in accordance with According to Notoatmodjo (2012), education will influence cognitive somebody in improvement knowledge , whereas according to Budiman and Riyanto (2013), information can influence knowledge somebody If often get information about a learning so will add his knowledge and insight . This is in accordance theory put forward by Mubarak (2011), knowledge as all something known based on experience man himself and knowledge will increase in accordance with the process of experience that he went through . Knowledge

This good employee is caused by the party companies that regularly provide training safety Work as well as giving information or counseling in a way periodic to employees and giving information in form leaflet / board posted announcement diarrhea office , mining even in the lobby, so results the show that the more Good level knowledge so number accident Work the more low added Again majority employee work in a company the more from three year . Whereas according to Smith and Sonesh (2011), stated that by providing K3 training capable reduce the risk of accidents work. The greater the knowledge of employees will K3 then the smaller the risk work accidents, and vice versa the increasing lack of employee knowledge will K3 then the greater the risk of occurrence work accidents . While from the results study in the field For case accidents experienced by employees is wound abrasion on hand , tripping wood , bitten insects and hands squeezed wood

IV. KESIMPULAN / CONCLUSION

The results of the research and discussion above writer interesting a number of conclusion related research, As for the conclusion as following:

1. Majority Employees at PT. PAJ use PPE.
2. Majority level knowledge of employees at PT. PAJ is Good .
3. Majority employees at PT. PAJ do not experience accident Work .
4. There is connection between use of PPE with incident accident work for employees at PT. PAJ Banyuasin City, South Sumatra.
5. There is connection between knowledge with incident accident work for employees at PT. PAJ Banyuasin City , Sumatra.
6. Knowledge variables is the most dominant variable that can influence the occurrence accident work for employees at PT. PAJ Banyuasin City, South Sumatra.

DAFTAR PUSTAKA / REFERENCE

- Adnani, H. *Public Health Science* . Yogyakarta: Muha Medika, 2018.
- Amalia, et al. Analysis of Personal Compliance Level in Supporting the Achievement of Zero Accident in Occupational Health and Safety (K3). Depok: UI, 2012.
- Andri . *Related Factors with Compliance Use Tool Protector Self (APD) on Worker Partners* . Andrew Bi Praise, Bina Mr. Student Happy Birthday. Semarang: SKM_UNDIP, 2017,Vols. Volume 5, Number 5. ISSN: 2356-3346.
- Annisa . *Analysis Behavior No Safe Worker PT Construction P (Limited) in Project Development Tiffany Apartment Jakarta South*. FIK_UIN, Jakarta : 2011.
- Arifin BA et al . Related Factors with Compliance Worker in Use of Personal Protective Equipment (PPE) in the Coal Yard Section of PT X Unit 3 & 4, Regency Jepara Year 2012. Semarang. Undip Ejournal .
- Azwar, Saifuddin. *Attitude Man* . Yogyakarta : Library Students , 2013.
- Azzahri , LM, and Ikhwan, K. Relationship Knowledge About Tool Use . Prepotive . *Journal of Public Health* . 3 (1): 50-57 : 2019.
- Barizqi , Inna Nesyi . Relationship Between Compliance Use of PPE with Incident Accident Work on Workers Building PT.Adhi Karya TBK Telogorejo Hospital Project . Faculty Knowledge Sports . Semarang State University. Semarang, 2015.
- Halimah. 2010. *Factors Which Influence Behavior Safe Employee in PT. SIM Plant Fat II*. Halima, Siti. Jakarta : UIN_SKM, 2010.
- Hasibuan , et al. (2020). Occupational Safety and Health Engineering . Medan: Yayasan Kita Menuli .
- KBBI. 2022. *Dictionary Big Language Indonesia (KKBI) Online*. Jakarta: Indonesian Language Development and Construction Agency .

Rusli K, Hutabarat V, Ariani P : Analysis Of The Relationship Between The Use Of Personal Protective Equipment, Knowledge, And Workplace In Employees ATPTPAJ in 2022

Lia Ade Putri. (2019). *Equipment Personal Safety For Mine Workers*.

Linggasari . *Factors that Influence Behavior Use Personal Protective Equipment in Engineering Department PT. Kiat Pilp & Paper Tbk . Tangerang . Depok : FKM_UI, 2011.*

Mahawati , et al . *Safety Work and Industrial Environmental Health* . Medan: Yayasan Kita Menulis : 2021.

Meilindah , D. (2018). Relationship between Use of Personal Protective Equipment (PPE) with Incident Accident Work On Workers Project Construction Construction of the New Building of the Faculty of Law, Sam Ratulangi University, Manado.

Mubarak, I. (2011). *Wahit . Health Promotion For Midwifery* . Jakarta: PT. Salemba Medika.

Notoatmodjo , S. *Education and Behavior Health*. Jakarta: Rina Created: 2012

Notoatmodjo, S. *Methodology Health Research (Print)2*. Jakarta: Publisher Copyright ; 2018.

Regulation of the Minister of Manpower and Transmigration of the Republic of Indonesia Number Per.08/Men/ Vii /2010 Concerning Personal Protective Equipment

Ridley. 2015. *Social Research Methods: Qualitative and Quantitative Approaches 7th Edition* . Pearson: Boston.

Sari. Compliance with Occupational Safety Regulations as a Mediator of the Influence of Occupational Safety Climate on the Tendency to Experience Work Accidents. Sari. Yogyakarta: Jurnal Psikologi Mandiri, 2010.

Siregar. *Relationship Compliance against Policy Safety and Occupational Health (K3) with Accident Work Mustard Harvester In Garden Labs* . Medan : SKM_USU, 2016.

Suma'mur , PK 2016. *Hygiene Company And Health Work (Hyperkes)*. Corn Seto: Jakarta.

Susatyo . G. 2018. *Management Safety And Health Work* . Mold First . Library Achievement . Jakarta.

Swarjana , IK 2017. *Public Health Science-Concepts, Strategies and Practices*. Yogyakarta: ANDI Publisher .

Syaaf . *Analysis Behavior At risk behavior in Unit Workers Welding Sector Informal*. Depok : SKM_UI, 2008.

Tarwaka . 2014. *Health and Safety Work (Management and Implementation) K3 IN Place Work*). Surakarta : Hope Press, 2014.

Tarwaka . 2016. *Basics of Occupational Safety and Prevention of Accidents in the Workplace* . Surakarta: Harapan press.

Tietjen. 2017. *Service Quality and Satisfaction*. Yogyakarta: Andi Offset Publisher .

World Health Organization. 2020. *WHO Coronavirus Disease (Covid-19) advice for the public* .

Yoga. Tjandra Tri Hastuti . 2020. *Health and Safety Work* . Jakarta: University of Indonesia.

Yulianto (2020). *Behavior APD Users As Alternative Improving the Performance of Exposed Employees Noisy High Intensity* . Surabaya: Media Pustaka.

Accepted Date	Revised Date	Decided Date	Accepted to Publish
30 Juni 2024	20 Juli 2024	27 Juli 2024	Ya