



The Relationship between the Use of Personal Protective Equipment and Work Accidents in Field Workers at PT. PLN (PERSERO) Belawan Medan

Ajeng Anasti¹, Reni Agustina Harahap²

^{1,2} Fakultas Ilmu Kesehatan Masyarakat Universitas Islam Negeri Sumatera Utara, Jl. William Iskandar Ps. V, Medan Estate, Kab. Percut Sei Tuan, Kabupaten Deli Serdang, Sumatera Utara 20371

ajenganasti2010@gmail.com, reniagustina@uinsu.ac.id

*Corresponding author

ajenganasti2010@gmail.com

Article Information	ABSTRACT
Article History Received : 25-03-2024 Revised : 03-04-2024 Accepted: 12-05-2024	Work Unexpected events like work accidents might result in fatalities and property damage. Businesses must supply personal protective equipment to reduce workplace accidents. Workers utilize personal protection equipment (PPE) as a safety measure to shield their bodies from potential workplace risks, illnesses contracted at work, and accidents. The goal of this study is to determine how field workers at PT. PLN (Persero) Belawan's attitude, knowledge, and usage of personal protective equipment relate to work-related accidents. This kind of research uses a cross-sectional study design and is quantitative in nature. There were forty-four samples used. The analysis's findings indicate a significant correlation (Pvalue <0.05) between attitude, knowledge, and the use of personal protective equipment and work accidents in employees at PT. PLN (Persero) Belawan. Attitude (p=0.042), knowledge (p=0.045), and the use of PPE (p=0.034) are the factors that were analyzed. The study concludes that attitudes, knowledge, and the usage of personal protection equipment are related to work-related injuries. In addition to issuing warning letters to employees who do not wear personal protective equipment often, the firm can step up its promotion of the use of PPE, apply penalties and other consequences.phrases.
Keywords: Equipment Field Workers Personal Protective Work Accidents	

Introduction

Every company has a different risk of work accidents, from the smallest to the largest risk, it depends on the type of industry and Standard Operating Procedures (SOP) in controlling the risk

of work accidents. Work accident is an unexpected and undesirable event in a work process that can cause material loss, time, and casualties (Putriyona, 2020)

According to the ILO, every year there are more than 250 million occupational accidents that occur in the workplace and also more than 160 million workers experience diseases due to hazardous work environments. And there are 1.2 million workers who experience accidents and die due to hazardous work environments. (Iskandar & N, 2022) The cause of work accidents as much as 80% occurs due to negligence workers, namely unsafe behavior (unsafe act) such as not using personal protective equipment (PPE) (Heryawan & Heryana, 2019)

According to information from the Employment Social Security Organizing Agency (BPJS), there were 221,740 work-related incidents in Indonesia in 2020. In 2021, this figure increased to 234,270 instances. From November 2022 till that point, the number of cases increased to 265,334.

According to BPJS Employment, work accident cases in North Sumatra Province in 2020 amounted to 13,173 cases and in 2021 amounted to 1,272. According to this data, most work accidents occur in the workplace, can be seen that the level of compliance of field workers in the use of personal protective equipment is still lacking, it can be seen that 6 out of 10 workers use complete personal protective equipment provided by the company, and 4 workers do not use complete personal protective equipment.

Every job has the potential for danger, as well as field workers at PT. PLN (Persero) Belawan. From the work accident data obtained at PT. PLN (Persero) Belawan for the past 3 years has increased, there have been 11 work accidents. In 2020, 1 worker had a minor work accident, in 2021, 4 workers had minor work accidents and 1 worker had a serious work accident, and in 2022 there were 4 workers had minor work accidents and 1 worker had a serious work accident in Belawan.

The researcher's interest in investigating the relationship between field workers' use of personal protective equipment and work accidents stems from the aforementioned issues. Belawan, PT. PLN (Persero).

Method

This kind of research uses a cross-sectional study design and is quantitative in nature. The purpose of this study is to determine the link between the dependent variable—work accidents among PT. PLN (Persero) Belawan field workers and the independent variable the usage of personal protective equipment.

In this study, 44 workers made up the sample and 83 workers made up the population. Purposive sampling was employed in the study's sampling procedures. Sampling with a purpose involves selecting participants based on predetermined criteria that the researcher has judged to be appropriate.

Results and Discussion

RESULTS

Table 1. Respondent Characteristics

Variable	N	%
Gender		
Man	41	93,2
Women	3	6,8
Total	44	100
Age		
<30 years	11	25,0
30-40 years	24	54,5
>40 years	9	20,5
Total	44	100
Last Education		
SMA	40	90,9
S1	4	9,1
Total	44	100
Length Of Service		
1-5 years	15	34,1
6-10 years	23	52,3
>10 years	6	13,6
Total	44	100

According to the tabel 1 above, it is known that out of 44 respondents, the majority respondents based on gender were male with a total of 41 (93,2 %). Most respondents are in the age category of 30-40 years with a total of 24 (54,5%). The majority of respondents have a high school education, namely as many as 40 (90,9%). And the majority of respondents based on tenure are 6-10 years as many as 23 (52,3%).

Table 2. Frequency Distribution of Attitude

Attitude	n	%
Good	16	36,4
Less Good	28	63,6
Total	44	100

Table 2 above indicates that 28 people, or 63.6 and have experienced work accidents are 28 people (36.4%) have a positive view toward the use of personal protection equipment. equipment are 16.

Table 3. Frequency Distribution of Knowledge

Knowledge	N	%
Good	15	34,1
Good Enough	9	20,4
Less Good	20	45,5
Total	44	100

Table 3 above indicates that of those who are known to know little or nothing about using personal protective equipment, there are 20 (45.5%) who are known to know this, 9 (20.4%) who know this and 15 (34.1%) who know this and that.

Table 4. Frequency Distribution of Personal Protective Equipment Use

Use Of Personal Protective Equipment	N	%
Wearing personal protective equipment	15	34,1
Not wearing personal protective equipment	29	65,9
Total	44	100

Univariate Analysis Results

Univariate analysis is an analysis conducted to describe the frequency distribution of each variable, namely the attitude variable, knowledge variable, personal protective equipment use variable and work accident variable.

Table 5. Frequency Distribution of Occupational Accidents

Occupational Accidents	N	%
Ever	41	93,2
Never	3	6,8
Total	44	100

According to the tabel 5 above, there are 41 (93.2%) who have experienced work accidents, and there are 3 (6.8%) who have never experienced work accidents.

Bivariate Analysis Results

Bivariate analysis uses statistical tests, namely the chi-square test, to ascertain the relationship between the independent and dependent variables. The bivariate results shown in tabular form are as follows.

Table 6. Relationship between Worker Attitudes and Work Accidents.

Attitude	Occupational Accidents				Total N	P Value
	Ever		Never			
	n	%	n	%		
Good	13	81,2	3	18,8	16	0,042
Less Good	28	100	0	0	28	
Total	41	93,2	3	6,8	44	

According to the tabel 6, shows the results that respondents who have a good attitude and have experienced work accidents are 13 (81.2%) respondents, and respondents who have a good attitude and have never experienced work accidents are 3 (18.8%). While respondents who have a bad attitude and have experienced work accidents are 28 (100%) respondents.

The results of the chi-square statistical test obtained a p-value = 0.042. Because the value of 0.042 (≤ 0.05), it can be concluded that there is a relationship between worker attitudes and work accidents.

Table 7. Relationship between workers' knowledge and work accidents.

Knowledge	Occupational Accidents				Total n	P Value
	Ever		Never			
	n	%	n	%		
Good	12	80	3	20	15	0,045
Good Enough	9	100	0	0	9	
Less Good	20	100	0	0	20	
Total	41	93,2	3	6,8	44	

Table 7 presents the findings, which indicate that 12 (80%) of the respondents had good knowledge but had suffered work accidents, while 3 (20%) respondents had strong knowledge but had never experienced a work accident. Conversely, 20 respondents, or 100%, reported having had a work accident and having inadequate information. work.

DISCUSSION

Relationship between Attitude and Work Accidents

Based on the results of bivariate analysis of the relationship between attitude and work accidents in field workers at PT. PLN (Persero) Belawan using the chi-square test, the p-value = 0.042 was obtained. Because the value of 0.042 (≤ 0.05), it can be concluded that there is a relationship between worker attitudes and work accidents.

This research is in line with research (Bara et al., 2021) with the title "The Relationship between Knowledge, Attitudes, and Perceptions of PPE Availability with the Risk of Work Accidents in Fire Fighting Workers at the X City Fire Department" the results of the chi-square statistical test obtained p value = 0.035 (≤ 0.05) which means that there is a relationship between attitude and the risk of work accidents in the X City Fire Department.

Attitude is a tendency to act. Attitude is a person's closed response to a certain stimulus or object that involves opinion and emotion factors (Notoatmodjo, 2010). Poor attitude is one of the factors causing work accidents (Y, 2017)

According to (Azrinindita et al., n.d.) dangerous worker attitudes that are often found in the field are not using personal protective equipment when working and result of this attitude, of course, unwanted things can occur in the form of work accidents such as being crushed, pinched, punctured, bumped or other risks. This must be prevented through habituation to good behavior based on the work mechanism that has been made to reduce the risk of work accidents. (Kasmir, 2018)

Relationship between Knowledge and Work Accidents

The p-value = 0.045 was obtained from the findings of bivariate analysis using the chi-square test. It is possible to conclude that there is a relationship between workers' knowledge and work accidents because the value of 0.045 (≤ 0.05) is present. The results of the chi-square statistical test obtained a p-value = 0.045. Because the value of 0.045 (≤ 0.05), it can be concluded that there is a relationship between workers' knowledge and work accidents.

This research is in line with research (Syahputra, 2017) with the title "Relationship between K3 Knowledge and Motivation with Work Accidents of Production Employees of PT Borneo Melintang Buana Eksport" the results of the chi-square statistical test obtained a p value = 0.000 (≤ 0.05) which means that there is a relationship between knowledge and work accidents at PT Borneo Melintang Buana Eksport.

Occupational safety and health knowledge is information that can make a worker realize that in every workplace there is a risk of danger, both minor and severe violating safety signs when doing a job. As a Knowledge is the result of knowing, and this occurs after people perceive a certain object. Lack of knowledge is one of the basic causes of work accidents. the better the knowledge, the better the actions that are formed, and vice versa, if the less knowledge, the less good the resulting actions will be. Knowledge is one of the important factors in motivating a person to act. A person's behavior based on knowledge will be more durable than a person's behavior without being aware of knowledge.

Relationship between the Use of Personal Protective Equipment and Work Accidents.

The chi-square test was used to conduct a bivariate analysis of the link between work accidents and the use of personal protection equipment by field workers at PT. PLN (Persero) Belawan. The results showed that the p-value was = 0.034. Based on the 0.034 (≤ 0.05) value, it may be inferred that there is a correlation between work accidents and the use of personal protective equipment.

This research is in line with research (Munthe, 2020) with the title "Relationship between the Use of Personal Protective Equipment (PPE) with Work Accidents in Rubber Penderes at PTPN III Kebun Sarang Ginting" the results of the chi-square statistical test obtained a p value = 0.003 (≤ 0.05) which means that there is a relationship between the use of personal protective equipment with work accidents in Rubber Penderes at PTPN III Kebun Sarang Ginting. Hazards, including the risk of work accidents. (Notoatmodjo, 2020) Using personal protective equipment is essential for this task since it can lower the risk of mishaps at work. This is governed by Permenakertrans Article 6 Paragraph 1, which mandates that all workers and guests must wear or utilize personal protective equipment in accordance with potential dangers and hazards.

Workers who use complete personal protective equipment are workers who comply with existing regulations, workers who comply will also always behave safely while working. Whereas workers who do not comply will tend to make mistakes and can result in losses to the company and to the workers themselves. (Maulina & Syafitri, 2018) According to OHSAS in research (Munthe, 2020) the use of personal protective equipment has 2 functions, specifically to guard against K3 dangers for workers and wearers of personal protective equipment and to shield them from losses due to improper use.

Conclusion

Based on the results of research conducted at PT. PLN (Persero) Belawan regarding the relationship between the use of personal protective equipment and work accidents in field workers at PT. PLN (Persero) Belawan, the following conclusions can be drawn:

1. According to the analysis's findings, there is a p-value of 0.042 (≤ 0.05) correlation between field workers' attitudes and work accidents at PT. PLN (Persero) Belawan.
2. The analysis's findings indicate that there is a p-value of 0.045 (≤ 0.05) correlation between workers' knowledge and work

accidents among field employees at PT. PLN (Persero) Belawan.

3. The use of PPE and work accidents among field workers at PT. PLN (Persero) Belawan are related, according to the analysis's findings, with a p-value of 0.034 (≤ 0.05).

Bibliography

- Iskandar, A., & N, L. . (2022). Analisis Penggunaan Alat Pelindung Diri (APD) Pada Tenaga Kerja (Manpower) Area ASH Silo PT. PLN (Persero) UPK Nagan Raya. *Jurnal Kesehatan Masyarakat*.
- Amelita, R. (2019). Faktor-Faktor Yang Menyebabkan Kecelakaan Kerja Pada Pekkerja Bagian Pengelasan Di Pt. Johan Santosa. *PREPOTIF Jurnal Kesehatan Masyarakat*, 3(1), 36. diakses 11 April 2022
- Kasmir. (2018).. *Manajemen Sumber Daya Manusia (Teori dan Praktik)*. PT Raja Grafindo Persada.
- Ketenagakerjaan, B. (2022). *Data Kecelakaan Kerja*.
- Maulina, N. &, & Syafitri, L. (2018). Hubungan Usia, Lama Bekerja Dan Durasi 37 Kerja Dengan Keluhan Kelelahan Mata Pada Penjahit Sektor Usaha Informal Di Kecamatan Banda Sakti Kota Lhoksema Tahun 2018. *AVERROUS: Jurnal Kedokteran Dan Kesehatan Malikussaleh*, 5(2).
- Ariyana, I. (2019). Kerja Tidak Aman Pada Pekerja Bagian Finishing Di Pt . X Bogor. Universitas Binawan, 33 <https://repository.binawan.ac.id/798/>. diakses 21 Juni 2023
- Dahlan, M. (2018). Analisis Penyebab Kecelakaan Kerja Berdasarkan Hasil Investigasi Kecelakaan Kerja Di Pt. Pal Indonesia. *Jurnal Kesehatan Masyarakat*, 3(9), 1–15. diakses 10 Februari 2022
- Darwis, A. Muflihah Internasional Labour Organisation. 2018. Kecelakaan Kerja dan Penyakit akibat kerja.

- Munthe, D. . (2020). *Hubungan Penggunaan Alat Pelindung Diri (APD) dengan Kecelakaan Kerja pada Penderes Karet di PTPN III Kebun Sarang Ginting.*
- Nastiti, D., & Munawir, M. (2021). Hubungan Pengetahuan dan Waktu Kerja Terhadap Kecelakaan Kerja Pada Pekerja Bengkel Las di Kecamatan Warunggunung. In *Jurnal Medika Sains.*
- Notoatmodjo. (2020). *Ilmu Perilaku Kesehatan.* Rineka Cipta.
- Putriyona, A. . (2020). *Analisis Pengaruh Penggunaan Alat Pelindungan Diri (APD) Terhadap Statistik Kecelakaan Kerja Pada Divisi Keamanan dan K3LH PT.PAL Indonesia (Persero).JTPM.*
- Rahayu, N. . (2019). *Hubungan Penggunaan Alat Pelindung Diri (APD) dengan Kejadian Penyakit Tinea Pedis (Kutu Air) Terhadap Pemulung di TPA Mrican Kabupaten Ponorogo.*
- Syahputra, E. . (2017). Hubungan Pengetahuan dan Motivasi K3 dengan Kecelakaan Kerja Karyawan Produksi PT Borneo Melintang Ekspor. In *Jurnal Kesehatan Masyarakat.*
- Y, A. (2017). *Faktor- Faktor Yang Berhubungan dengan adanya Kejadian Kecelakaan Kerja pada Pemanen Kelapa Sawit di Kecamatan Lembah Melintang Kabupaten Pasaman Barat.*