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Factors Related to Work Accidents for Workers in the Production Division of Palm Oil Mills, Bangkinang District, Kampar Regency in 2021

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Abstract

This study aims to determine factors related to work accidents for workers in the production division of Palm Oil Mills, Bangkinang District, Kampar Regency in 2021. The type of research used is quantitative with a cross sectional study design. The sample in this study was 86 people. Data analysis was done by bivariate and multivariate. The results of the study of variables related to work accidents from the bivariate analysis were age (p-value=0.004), years of service (p-value=0.007), knowledge (p-value=0.004), attitude (p-value=0.007), occupational safety and health (K3) training (p-value=0.004), and use of personal protective equipment (APD) (p-value=0.000). The most dominant variable on work accidents is the use of APD (p-value=0.032).

Keywords
work accidents; age; years of service; knowledge; attitude

I. Introduction

The development of industry in Indonesia is currently in an increasingly advanced condition but is still not balanced with the awareness to understand and implement work safety properly to prevent accidents. Many types of accidents that occur in the workplace are fatal to non-fatal, but are not properly reported to be handled as prevention and control efforts (Sucipto, 2014). In every work activity there is always a risk of failure. And when a work accident occurs, no matter how small it will result in a loss effect. Because the potential for work accidents as early as possible must be prevented and minimized the impact (Juliana et al., 2018).

In principle, occupational health and safety (K3) is an effort to suppress or reduce the incidence of accidents and occupational diseases which in essence cannot be separated between safety and health. In Indonesia, the obligation to protect K3 has been regulated in Law Number 1 of 1970 concerning K3, it is explained that every worker has the right to protection for his safety in doing work for the welfare of life and increasing national production and productivity as well as ensuring his safety.

K3 is the best means to prevent accidents that result in fatal work accidents and non-fatal work accidents. K3 is one aspect of labor protection by implementing controls to protect all aspects that have the potential to endanger workers. By implementing good occupational safety and health controls, it is expected that the workforce will achieve physical endurance, work power and a high level of health (Sucipto, 2014).

According to the International Labor Organization (ILO) in 2018, at the global level it is estimated that more than 2.78 million workers die every year due to work accidents or occupational diseases. And more than 374 million workers are injured or injured or fall ill every year due to work accidents (International Labor Organization, 2018).

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In Indonesia, the number of work accidents in recent years based on the BPJS Employment annual report, the number of work-related accidents in Indonesia from 2018-2020, namely in 2018 there were 173,105 cases, in 2019 there were 114,000 cases, and in 2020 there were 177,000 cases of work accidents. The increase in work accident cases in 2020 was much greater than the previous year, including 4,275 cases of disability, 9 cases of permanent total disability and 2002 cases of death (BPJS Ketenagakerjaan, 2020). For this reason, serious attention is needed from the Ministry of Manpower related to work accident cases by implementing a good K3 culture so that the number of work accidents can be suppressed which in turn will increase work productivity and the need for awareness and the role of employers and workers on the importance of implementing K3.

A work accident is an unwanted and unexpected event or event. Unexpected work accidents can occur due to work or when carrying out work there is no intentional element. Accidents cause harm to humans (life casualties, injuries, disabilities), losses to the production process, or damage to property that occurs in an industrial work process (Tarwaka, 2008). The cause of work accidents can be caused by two things, namely unsafe action and unsafe conditions. Unsafe action is an unsafe action from workers that is closely related to human factors or occurs due to human error that does not comply with safety principles, for example not using complete personal protective equipment when doing work, lack of knowledge, training, age, education level, years of service, attitudes and ways of working that are not good and do not follow procedures. Meanwhile, unsafe conditions are unsafe workplace conditions, for example dirty and slippery workplace conditions, poor lighting conditions, unfavorable temperatures and noise from machines (Anwar and Sugiharto, 2018).

The results of research conducted by Handari and Qolbi (2019) on Height Workers at PT. X states that knowledge affects the incidence of work accidents where workers who have poor knowledge are 4.2 times more at risk of having work accidents than workers who are well informed and where workers who do not use APD are 3.5 times more risky to have work accidents. The results of research conducted by Puteri and Afriani (2019) on employees of the technical service unit at PT. PLN Bangkinang City factors related to the incidence of work accidents, namely between the working period of workers < 5 years are 8.5 times more likely to have work accidents compared to workers who have a working period of > 5 years. The results of research conducted by Dasril et al. (2018) at PT. The P&P Lembah Karet that affects the incidence of work accidents, among others, the age of workers < 35 years of age, the younger group has more accidents than workers > 35 years of the old age group. Where young people more often experience work accidents due to work carelessly and like to rush at work (Sucipto, 2014).

The causes of work accidents are 88% from human factors (unsafe action), 10% from unsafe conditions and 2% from other factors (Desmayanny et al., 2020). Work accidents can happen anywhere, one of which is in the palm oil processing industry, which is an activity that contains potential hazards and a high risk of work accidents.

Based on preliminary observations on all workers conducted by researchers in the factory environment, there are still workers who do not comply and understand the importance of using personal protective equipment (APD) (masks, helmets, gloves) when working. This can be seen when workers carry out the work process, they take off the APD they use on the grounds that it is not comfortable to wear when working, and there are some workers concerned who only use APD when they are being supervised by a general K3 assistant even though there are already K3 signs. such as mandatory signs to use APD and an attitude of not caring about work safety such as there are still workers working in a hurry and not being careful at work. There are still workers who do not pay attention to and

comply with occupational safety and health which can be the cause of work accidents. In addition, in terms of the workplace environment, such as noise from palm oil processing machines as well as slippery floor conditions due to spills of water and oil in the work process cause discomfort in work which can cause work accidents.

This study aims to determine factors related to work accidents for workers in the production division of Palm Oil Mills, Bangkinang District, Kampar Regency in 2021.

II. Research Method

The type of research used is quantitative with a cross sectional study design. Quantitative research is a type of research that aims to make a systematic, factual and accurate description of the facts and characteristics of the population of a particular area (Pandiangan et al., 2021). Cross sectional study design, which is looking for the relationship between the independent variable and the dependent variable studied at the same time (Pandiangan, 2015).

The population in this study were all workers in the production division of Palm Oil Mills, Bangkinang District, Kampar Regency in 2021. Pandiangan et al. (2018), the sampling technique used is probability sampling with the technique taken used in this research is proportional random sampling technique, which is a sampling technique where all members have the same opportunity to be sampled according to their proportions by providing equal opportunities or opportunities for each member of the population to selected as a member of the sample. The sample in this study was 86 people.

Data collection taken is primary data and secondary data. Secondary data taken by library research. Library research of reference sources is a form of research that uses library facilities by examining theoretical discussions from various books, articles, and scientific works related to writing (Pandiangan, 2018).

Data analysis is an activity that aims to determine the relationship between the independent variable and the dependent variable (Tobing et al., 2018). Data analysis was done by bivariate and multivariate.

III. Results and Discussion

3.1 Bivariate Analysis

Bivariate analysis is a statistical test used to see the relationship between the independent variables, namely age, years of service, education level, knowledge, attitude, occupational health and safety (K3) training, adherence to procedures and use of personal protective equipment (APD) dependent variable, namely work accidents. The results of this analysis are then presented in the following table form:

Table 1. Bivariate Analysis

Variable	Work Accidents				Total		P-Value	Odds Ratio	95% Confidence Interval	
	Once		Never						Lower	Upper
	n (28)	%	n (58)	%	n (86)	%				
Age										
Young < 35 Year	22	46.8	25	53.2	47	100	0.004	4.840	1.708	1.715
Old ≥ 35 Year	6	15.4	33	84.6	39	100				
Years of Service										

New < 5 Year	21	46.7	24	53.3	45	100	0.007	4.250	1.560	11.580
Long ≥ 5 Year	7	17.1	34	82.9	41	100				
Education Level										
Low	2	50.0	2	50.0	4	100	0.448	2.154	0.287	16.146
High	26	31.7	56	68.3	82	100				
Knowledge										
Less	21	47.7	23	53.3	44	100	0.004	4.565	1.672	12.462
Good	7	16.7	35	83.3	42	100				
Attitude										
Negative	20	47.6	22	52.4	42	100	0.007	4.091	1.541	10.862
Positive	8	18.2	36	81.8	44	100				
K3 Training										
Never	21	47.7	23	52.3	44	100	0.004	4.565	1.672	12.462
Once	7	16.7	35	83.3	42	100				
Adherence to Procedures										
Not Obey	22	47.8	24	52.2	46	100	0.003	5.194	1.830	14.741
Obey	6	15.0	34	85.0	40	100				
Use of APD										
Incomplete	24	53.3	21	46.7	45	100	0.000	10.571	3.228	34.619
Complete	4	9.8	37	90.2	41	100				

Source: Processed Data (2021)

The results of the study of variables related to work accidents from the bivariate analysis were age (p-value=0.004), years of service (p-value=0.007), knowledge (p-value=0.004), attitude (p-value=0.007), K3 training (p-value=0.004), and use of APD (p-value=0.000).

3.2 Multivariate Analysis

To find out the relationship of more than one independent variable with one dependent variable, it must be continued by conducting multivariate analysis. The statistical test used multiple logistic regression to find out which independent variable is more closely related to the dependent variable. Multivariate analysis consisted of 2 stages, namely bivariate selection and multivariate modeling.

From the results of bivariate analysis, the variables that meet the requirements to enter multivariate modeling with p-value < 0.25 are age, years of service, knowledge, attitude, K3 training, adherence to procedures and use of APD. The following table shows the results of the bivariate selection:

Table 2. Bivariate Selection Results

Variable	P-Value	Multivariate Candidate
Age	0.001	Candidate
Years Of Service	0.003	Candidate
Education Level	0.460	Not Candidate
Knowledge	0.002	Candidate
Attitude	0.003	Candidate
K3 Training	0.002	Candidate
Adherence to Procedures	0.001	Candidate
Use of APD	0.000	Candidate

Source: Processed Data (2021)

All independent variables that became candidates as shown in Table 2, were included in the multivariate analysis as shown in the table below:

Table Multivariate Modeling

Variable	P-Value	Exp (B)	95% C.I For Exp (B)	
			Lower	Upper
Use of APD	0.032	4.642	1.143	18.842
K3 Training	0.515	1.572	0.403	6.130
Age	0.441	1.742	0.424	7.148
Attitude	0.318	1.902	0.538	6.722
Adherence to Procedures	0.174	2.348	0.685	8.042
Knowledge	0.169	2.369	0.693	8.099

Omnibus Test: p-value 0.000 Nagelkerke R square: 0.434

Source: Processed Data (2021)

The most dominant variable on work accidents is the use of APD (p-value=0.032).

IV. Conclusion

The conclusion in this study is the use of personal protective equipment (APD) as the most dominant factor in the incidence of to work accidents for workers in the production division of Palm Oil Mills, Bangkinang District, Kampar Regency in 2021.

It is recommended for the company to provide comprehensive training related to use of APD, increase socialization about the use and dangers of not using APD as well as occupational safety and health, increase supervision, reinforce the enactment of sanctions and award awards in order to motivate the workforce.

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