

Relationship of Conduct Is Not Safe with Fuel Accidents in Work Outletter Palm Oil Plants in PTPN IV of Year 2017

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Keywords: Determinant, Unsafe Behavior, Burns

Abstract: Burns are one of the accidents and still a global public health problem stating more than 95% of the incidence of burns leads to mortality (mortality). The purpose of this study was to determine the determinant of unsafe behavior against burn incidence at the workers of Tinjoan palm oil factory in PTPN X Year 2017. Research with cross sectional approach. The population is all workers on the ignition part of the PTPN X Tinjoan palm mill as many as 80 people and all of them are sampled in this study. The data were collected by giving questionnaires, Independent Variables to know were is age, work period, education, training, knowledge, attitude and action while dependent variable of burn incidence. The results showed 13.7% of workers suffered burn injuries. Working Period ($p = 0,026$), and action ($p = 0,023$) have an effect on burn incidence at Tinjoan palm oil mill worker at PTPN X Year 2017. Suggested To Company Parties is expected to improve health and safety promotion. Occupational health and safety promotion can be done by marking signs at risky places and work equipment such as the completeness of Personal company.

1 INTRODUCTION

1.1 Background

One of the workplace accidents is burns. Burns are a global public health problem and over 95% of the incidence of burns leads to mortality (mortality). By 2014, the World Health Organization (WHO) notes that there are 265,000 deaths occurring annually worldwide due to burns. According to the American Burn Association (2015), 3,240 deaths occur annually from burns in the United States caused by trauma from fire accidents, vehicle accidents, smoke inhalation, electrical contacts, chemicals, and hot objects (ABA, 2015).

In Indonesia, the prevalence of burn injury was ranked the sixth largest in 2013 of 0.7% with the highest prevalence being Papua (2.0%) and Bangka Belitung (1.4%) (Kemenkes RI, 2013). Based on medical records of RSUP Haji Adam Malik Medan in the period 2011-2014 there are 353 cases of burns with the most cause is flame burn injury as much as 174 cases (50,4%) (Maulana, 2014).

The results of research conducted by Kalalo (2016) in Kabupaten Minahasa obtained a correlation between knowledge about occupational safety and

health (K3) and OHS attitude with work accident Protective Equipment and to the employee subject to compliance with OSH regulations applied by the incidence in fishermen group ($p < 0,05$). Likewise Aswar (2016) in Kendari to get factors associated with workplace accidents is knowledge of K3, work attitude and the use of personal protective equipment (PPE) with accidents. Research conducted by Emli (2014) in Simalungun District found that the factors of personal protective equipment, action and work environment affect the incidence of accidents. The results of research conducted by Philip (2014) states there is a relationship between age, employment, employee status and knowledge with unsafe actions.

Kebun Tinjoan is one business unit of PT. X located in Simalungun District Pematangsiantar. The plantation is engaged in oil palm plantation and processing which produces CPO (Crude Palm Oil) or crude palm oil and Palm Kernel (PK) or high quality core oil. In processing palm oil in producing CPO requires workers on the ignition. Workers in the ignition section are workers assigned to supply pulp and shell fuels using boiler installations, electro-driven motors, steam vessels and other fittings to produce steam with water raw materials. Most of these workers are burned by burning fires.

Data 2016 not found in written information about burn incident at PT. X was not found, but based on preliminary surveys and interviews with ignition workers, they claimed that burns were common to them, especially to new workers, but in reporting burns were never reported because their burns were less severe. The incidence of burns is also more common in the daytime because during the day the focus of the workers down due to the temperature of hot air. Based on interviews to workers, the incidence of burns due to not use self-protective equipment (PPE) is complete for reasons of uncomfortable, not careful and do not run work procedures established by management or company, and most often they do that they are in a hurry in completing their tasks to get the job done quickly. Another phenomenon is the lack of knowledge of workers, attitudes, and actions about security in work, is possible because new workers come to work, low education and never participate in training from the company.

From the preliminary survey it was found that out of 80 workers only 12% using APD and 39 people or 48.75% were burned because of unsafe acts. From the background it is seen that the proportion of workers suffering from burns of 48.75% is indicated because of unsafe behavior by workers. Therefore, the authors are interested in examining about the determinants of unsafe behavior against burn incidents in oil palm factory workers at PT. X Year 2017.

1.2 Problems

Based on the above background description, then the problem in this research is how determinant (age, working period, education, training, knowledge, attitude, and action) causing burn incident at palm factory worker (PKS) Tinjoan PTPN IV Year 2017 ?

1.3 Research Objectives

1.3.1 General Purpose

The purpose of this study is to determine the determinant of burn incidence in PKS Tinjoan workers in PTPN IV Year 2017.

1.3.2 Specific Objectives

- a. To determine the effect of age on occupational safety and health with burn incidence in PKS Tinjoan worker in PTPN IV Year 2017.
- b. To know the effect of working period on work safety and health with burn incident on PKS Tinjoan worker in PTPN IV Year 2017.

- c. To know the effect of education on occupational safety and health with burn incidence in PKS Tinjoan workers in PTPN IV Year 2017.
- d. To know the effect of training on occupational safety and health with burn incidence in PKS Tinjoan worker in PTPN IV Year 2017.
- e. To know the effect of knowledge about occupational safety and health with burn incidence in PKS Tinjoan worker in PTPN IV Year 2017.
- f. To know the effect of attitudes about occupational safety and health. with burn incidence in PKS Tinjoan worker in PTPN IV Year 2017.
- g. To know the effect of unsafe acts with burn incident on PKS Tinjoan worker in PTPN IV Year 2017.

1.4 Hypothesis

The determinants of burn incidence in oil palm factory workers in PTPN IV 2017 are age, working period, education, training, knowledge, attitude and actions.

1.5 Research Benefits

With this research is expected to provide benefits to various parties, namely:

1. As an input for the management of Kebon Tinjoan PTPN IV in supervising workers in safe behavior to avoid work accident incidents
2. For palm oil mill workers are expected to be more aware of the importance of safe behavior in work to avoid work accidents.
3. As a reference input to the author / further researcher and can be useful in developing science.

2 LITERATURE REVIEW

2.1 Unsafe Behavior

2.1.1 Understanding

Some experts distinguish the forms of behavior into three domains of knowledge, attitude, and action or often we hear with the term knowledge, attitude, practice (Sarwono, 2012). Behavior work is a part that plays a very important role in working life. Work behavior is the action and attitude shown by the people who work. Working behavior is how people in the work environment can actualize themselves

through attitudes in work (Robbins, 2014). Thus unsafe behavior is the action or deed of an employee or employee that increases the likelihood of an accident to the employee.

2.1.2 Classification Unsafe Behavior

Unsafe behavior (Bird and Germain, 1990) is a behavior that can permit an accident or incident. Unsafe behavior is a human error in taking an attitude or action. The classification of human error, namely:

a. Error by forgetting

This error occurs to someone who actually knows, is able and intends to do it properly and safely and has been commonly done. However, the person made a mistake because he forgot. The fix is to change the means and the environment, remind to be more careful, increase supervision, reduce impact, and others.

b. Error for not knowing

This error occurs because the person does not know how to work and operate the equipment properly and safely, or a calculation error occurs. This usually happens due to lack of training, error instructions, peruvahan information not notified, and others.

c. Error for not being able

This type of error occurs because people are unable to perform the task. Example: work is too difficult, physical or mental burden, heavy work, task or information too much and others.

d. Error due to lack of motivation

Mistakes due to lack of motivation can occur due to:

- 1) Personal encouragement, such as wanting to finish quickly, melalau shortcuts, want to feel comfortable, lazy to wear PPE, attract attention by taking excessive risks, and others.
- 2) Encouragement of the environment, such as the physical environment, the management system of examples from the leadership and others.

Examples of unsafe behavior (Winarsunu, 2008):

- a. Unqualified actions and authority. The important thing is that all equipment must be operated by someone who has authority and is familiar with the dangers and operating procedures
- b. Less or no use of personal protective equipment. There are many opportunities workers do not have or use personal protective equipment for a particular task performance.
- c. Failure to save equipment.

- d. Works at a dangerous pace. As workers want to try to end work too soon, it may run the engine at a dangerous pace. Workers may also take shortcuts that can lead to workplace accidents. Management must ensure that this kind of action is incorrect.
- e. Failure in warning. If the equipment has an automatic to turn on and off, or if an accurate alert alert should be provided. Also a dangerous floor or work surface should be marked.
- f. Avoid or remove safety equipment. Many work tools are accompanied with safety equipment such as keys, fuses and so on. Someone tends to move or avoid this kind of equipment for reasons of comfort in work.
- g. Using improper equipment. Equipment often becomes damaged by length of use.
- h. Using certain equipment for other purposes that deviate.
- i. Work in dangerous places without proper safeguards and warnings.
- j. Fixed equipment wrongly, for example on live machine equipment that could endanger safety.
- k. Working roughly. This activity is very dangerous and is not permitted by the company either on or off the job.
- l. Use unsafe clothes when working.
- m. Taking up unsaved work positions. For example, lifted wrongly, reaching a height that requires the depletion of energy.

2.1.3 Phases of Unsafe Behavior

According to Sanders (1993), malicious behavior occurs through three phases of workers gradually, namely:

a. Management Level

Management greatly affects the formation of unsafe acts. Among other things is not firmly program health and safety at company and perwatan to machine used

b. Aspects of the physical, psychological and sociological environment of the work

Physical environment such as workspace temperature, noise level, illumination, humidity and workspace layout, equipment design such as control, display, conformity, warning of hazards, electrical hazards, engine hazards, and others. While the social and psychological environment such as group norms, inter-group communication, morale and union work. Aspects of the physical, psychological and sociological environments of the work will affect the level of fatigue, concentration and discretion of labor space.

c. Individual

Individual characteristics can influence their behavior in work. Elements of individual characteristics include the level of ability, awareness, experience, training, personality, physical ability, age, fatigue, motivation, addiction, intelligence, job satisfaction and so forth.

These three phases affect each other's first phase, affect the second phase, and the second phase affects the third phase (Winarsunu, 2008)

2.2 Work Accidents

2.2.1 Understanding

Regulation of the Minister of Manpower No. 3/1998 that work accidents are an undesirable and unexpected event that may cause human and / or property casualties. But even without accidental accident, there is no reason, either because of weaknesses on the part of the employer or the worker or both, where this incident can cause harm to both (Ridley, 2008).

The Occupational Health and Safety Assessment Series (OHSAS) 18001 states that occupational injuries are defined as work-related events that may cause injury or illness (depending on the severity) of deaths or events that may lead to death (Ramli, 2010). Occupational Safety and Health Organization (OSHA) classifies accidents based on accidents that affect the worker, ie, first aid, medical treatment, light work or accidents resulting in restricted work, loss time incident) and death (fatality). accidents are undesirable events that result in physical harm to humans or damage to property. This is usually the result of contact with energy sources (kinetic, electrical, chemical, thermal, etc.) (Tarwaka, 2008).

2.2.2 Main Cause Occurrence of Occupational Accidents

An accident is an event that always has a cause and always results in a loss. An occupational accident will only occur when there are multiple causal factors simultaneously in a workplace or production process. An accident can not happen by itself, but occurs by one or several factors causing the accident at once in an event. Because of the occurrence of accidents or injury caused by 5 (five) causal factors that sequentially and stand parallel between the factors one with the other. The five factors are (Tarwaka, 2008):

1. Domino customs
2. Domino error

3. Domino actions and unsafe conditions

4. Domino crash

5. Domino injury

According to Dessler (Hanggraeni, 2012) there are two main causes of accident in the company:

- a. Unsafe conditions

Unsafe conditions are mechanical or physical conditions resulting in accidents. Included in this condition include the following:

- 1) Equipment that is not secured properly
- 2) Damaged equipment
- 3) Malicious settings or procedures, or around machines or equipment

- b. Unsafe action

Unsafe acts are the main cause of accidents and humans that cause these unsafe acts. Included in this category of unsafe acts include:

- 1) Not securing equipment
- 2) Do not use protective clothing or body protective equipment.
- 3) Throw objects at random
- 4) Working at an unsafe speed, either too fast or too slow
- 5) Causes the malfunction of the safety device by moving, adjusting or deciding.
- 6) Use unsafe equipment in loading, placing, mixing or combining
- 7) Taking (unsafe position under dependent load).
- 8) Lifting things carelessly.
- 9) Annoying, teasing, fighting, playing and so on.

Unsafe conditions and unsafe actions will result in workplace accidents and, if often, will threaten the company's operations.

These work accidents can result directly:

1. Physical suffering of labor, such as death, disability and so on.
2. Loss of work time, property damage and so forth.

2.2.3 How to Prevent Work Accidents

There are several things a company can do to prevent accidents at work, including (Hanggraeni, 2012):

- a. Reduces unsafe conditions. This is done by ensuring that the conditions and working environment meet the safety standards
- b. Reduces unsafe working behavior. This can be done by giving awareness to the workers that adhering to the standards of job security is very important.

- c. Have a worker who has a good working attitude. The selection process also plays a role in management.
- d. Conduct K3 training. Training on K3 is important to be held in order to increase awareness and awareness of workers on hazard sources and ways of handling so as to minimize the potential for workplace accidents.
- e. Conduct continuous inspection and motivation. Inspections should always be made to ensure that workers comply with and implement existing security standards. If a violation is found, the company can directly correct and punish the employee. In addition, the motivation to continue to comply with security standards must also always be done, how can by putting banners, posters, or invitations to always behave work that follows security standards.
- f. Conduct K3 audit. Audits are conducted to ensure that K3 systems and management are properly planned and implemented. This audit is useful to find out whether there is a discrepancy between the standards established by the actual implementation in the field.

Suma'ur (2009) states that, accidents due to work can be prevented by:

a. Regulations

Required provisions concerning general conditions of work, planning, construction, maintenance and maintenance, supervision, testing and working of industrial equipment, employers 'and workers' duties, exercises, first aid, and medical examinations.

b. Standardization

Determination of official, semi-official or unofficial standards of construction that meet safety requirements, certain types of industrial equipment, safety practices, PPE or general hygiene.

c. Supervision

Supervision of compliance with the required statutory provisions.

d. Research is technical

Technical research eg on hazardous materials, safety fences, testing of PPE (Personal Protective Equipment), blast prevention and other equipment.

e. Medical Research

Medical research mainly includes research on physiological effects, environmental and technological factors and the physical circumstances that result in accidents.

f. Psychological research

Psychological research is an investigation of the patterns of obligation that result in accidents.

g. Research is statistically

Statistical research to determine the types of accidents that occur, how much, what to do, in what work and why.

h. Education

Safety education in technical curriculum, trade schools or carpentry courses.

i. Exercise

Practice exercises for the workforce, especially the new workforce involves raising awareness, quality of knowledge and skills of OSH for the workforce.

j. Excitement

Use of various ways of counseling or other approaches to elicit survival.

k. Insurance

Insurance is a financial incentive to increase accident prevention, for example in the form of premium deductions paid by the company, if the safety measures are very good.

l. Safety at enterprise level

One of them by inspection or examination is an activity to prove the extent to which the working conditions still meet the terms and conditions K3.

2.3 Burns

2.3.1 Understanding

Burns are a unique wound among other forms of injury because they include large amounts of dead tissue that remain in place for long periods of time. Rapid burns will be inhabited by pathogenic bacteria; undergo exudation with large amounts of water, proteins and electrolytes, and require grafting of skin from other parts of the body to produce permanent wound closure (Smeltzer & Suzanne C, 2002). Burns are injuries caused by direct or indirect contact with high temperatures such as fire, hot water, electricity, chemicals and radiation (Nugroho, 2012).

2.3.2 Causes of Burns

According Moenadjat (2003), based on the cause of burns can be divided into:

a. Burns due to fire

Due to direct contact between the network with open flame, and causing direct injury to the network.

Hot object (contact): Occurs from direct contact with a hot object. The resulting burn is limited to the area of the body in contact. Examples include cigarette burns and tools such as soldering iron or cookware.

b. Burns due to hot water

Occurs from contact with hot water. The thicker the liquid and the longer the contact time, the greater the damage it will inflict. Accidental or accidental wounds can be distinguished by the pattern of burns.

c. Burns due to chemicals (acidic or strong bases)

Burns due to chemicals such as various acidic substances, bases, and other sharp materials. Chemical concentrations, length of contact and the amount of tissue exposed determine the extent of injury due to these chemicals. Chemical burns can occur for example because of contact with cleaning agents that are often used for domestic use and various chemicals used in the fields of industry, agriculture and the military

d. Burns due to electricity and lightning

Electrical burns, both Alternative Current (AC) and Direct Current (DC). Electrical burns are caused by heat driven from electrical energy delivered through the body. The severity of the wound is affected by the length of contact, the high voltage and the way the electric waves reach the body.

2.4 Platform Theory

This theory was introduced by H.W. Heinrich in 1931 after analyzing 75,000 cases of accidents. In the observation result concluded that 88% cause of accident is unsafe acts, 10% is unsafe condition and 2% is unavoidable.

2.5 Concept Framework

Law no. 1 year 1970 in Ramli (2010) explains that the safety of work in a workplace covers various aspects relating to the condition and safety of production, human and work mode in this case is meant behavior. Behavior on preventing and controlling the onset of illness due to physical, as well as psychological work, poisoning and transmission associated with health aspects of work. Human error in high-risk jobs is an event based on poor individual OSH behavior. Based on Domino Heinrich's Theory of one of the factors

causing occupational injury is unsafe behavior and / or unsafe condition. (Unsafe act and / or unsafe condition). Heinrich states that unsafe act and unsafe condition are the main factors in the cause of the accident.

3 RESEARCH METHODS

3.1 Types of Research

This research is a quantitative-analytic research using cross sectional design approach, that is a research where the measurement of free variable and dependent variable at the same time, with the aim of analyzing the relationship of unsafe behavior with burn incidence at Tinjoan palm factory workers in PTPN IV .

3.2 Population and Sample

3.2.1 Population

The population in this research is all workers at the ignition part at PTPN IV Tinjoan palm plant as many as 80 people consisting of 8 people in the boiler, the fire furnace 13 people, the watering floor 7 people, the electricity 4 people, the ram loading part as much 26 person, 8 person cleaning machine parts, 4 people administration department and foreman 3 people.

3.2.2 Sample

The sample in this research is all the workers on the ignition part in the palm oil factory Tinjoan PTPN IV of 73 people.

3.3 Data Collection Method

3.3.1 Primary Data

Primary data in this research was obtained by interview by using questionnaires that design based on SOP.

3.3.2 Secondary Data

Secondary data obtained from PTPN IV which includes, company profile, number of workers, report of disease history data.

3.4 Variables and Operational Definition

3.4.1 Variables

The variables in this study consist of independent variables and dependent variables are:

a. Free Variable (Independent)

The independent variable is a variable whose existence affects the dependent variable. In this case the independent variables include: Age, Work Period, Education, Training, Knowledge, Attitude, Action

b. Dependent Variable (Dependent)

The dependent variable is the variable whose existence is influenced by the independent variables, In this study including the dependent variable is the incidence of burns

3.4.2 Operational Definition of Variables

- a. Age is the length of time a nurse's life journey is calculated from birth to the time of study
- b. The period of work is the length of work the worker has gone through until the time of the study which is calculated by year.
- c. Education is the level or level of the last formal education ever undertaken by workers
- d. Training is a short-term education process on occupational safety and health provided to workers
- e. Knowledge is everything that workers know about safety and health that can cause burns.
- f. Attitude is the worker's response to everything about safety and health on burns.
- g. Unsafe action is an action that workers make that can cause burns while working.
- h. The occurrence of burns is the destruction of body tissues of workers due to exposure to embers.

3.5 Measurement Method

Methods of measurement of variables used in this study are as follows (Arikunto, 2013):

3.5.1 Independent Variable Measurement

a. Age of respondents categorized as follows:

0 = \geq 35 years

1 = $<$ 35 years

Scale: Ordinal

b. Work Periods are categorized as follows:

0 = \geq 2 years

1 = $<$ 2 years

Scale: Ordinal

c. Education is categorized as follows:

0 = High (SMA, D3, PTP)

1 = Low (Not completed primary, elementary, junior high)

Scale: Ordinal

d. Training is categorized as follows:

0 = Have attended the training

1 = Never attended the training

Scale: Nominal

e. Knowledge of respondents about prevention of burns in the measured by using questionnaires consisted of 11 questions, if the answer correctly given the score 1 and one given a score of 0. Then obtained the lowest score 0 and the highest score 12. Knowledge categorized as follows:

0 = High Knowledge has a score of $>$ 75% with the right questions (8-11)

1 = Low Knowledge has a score of \leq 75% with the right questions (0-7)

Scale: Ordinal

f. Measurement of attitudes about burn prevention was measured using questionnaire consisting of 9 questions, if the answer strongly agreed to be given a score of 4, agreed to score 3, hesitated given score 2, disagree scored 1 and strongly disagree given a score of 0 for positive statements . In the negative statement the answer is very agree given a score of 0, agree to be given a score of 1, hesitate given a score of 2, not agree to score 3 and strongly disagree given score 4. Then obtained the lowest score 0 and the highest score 40. Attitude categorized as follows:

0 = A positive attitude has a score of $>$ 75% with the right questions (27-36)

1 = Negative attitudes have a score of \leq 75% with the right questions (0-26)

Scale: Ordinal

g. Action

Measurement of action using questionnaire consists of 10 questions, Positive action if answer questions always given a score of 4, often given a score of 3, sometimes given a score of 2, rarely given a score of 1 and never 0. Negative measures if answering questions always given a score of 0 , often given a score of 1, sometimes given a score of 2, rarely given a score of 3 and never 4. Action categorized as follows:

0 = Good action has score $>$ 75% with right questions (score 30-40)

1 = Poorly scored $\leq 75\%$ with the right questions (score 0-29) Scale: Ordinal.

3.5.2 Measurement of Dependent Variables

Measurement of dependent variable that burn incidence is arranged in 1 question with answer choice as much as 2 point, if answer yes marked 1, and if marked 0, then categorized become:

0 = No burns

1 = Experiencing burns

Scale: Nominal

3.6 Data Analysis Method

After the data is collected the next step is to analyze the relationship between the independent variables with the dependent variable, the research using computerized program, then done the data analysis gradually. The data analysis using:

1. Univariate analysis which is a descriptive analysis to see the frequency distribution of each variable (independent variable and bound)
2. Bivariate analysis to see the relationship between independent variables with independent dependent variable by using chi-square at 95% confidence level ($p < 0,05$).
3. Multivariate analysis is a further analysis to determine whether or not the influence of independent variables on dependent variable together by using logistic regression analysis at 95% confidence level ($p < 0,05$).

4 RESEARCH RESULT

Employee Age Relation with Burn Injury to Oil Palm Planters at PT X Year 2017.

Based on the result of the research, the age correlation with the burn incidence on the workers showed that from 14 people aged ≥ 35 years there were 12 people (85,7%) who did not burn and who burned 2 people (14,3%), whereas from 59 people < 35 years old there were 44 people (74.6%) who did not suffered burns and who suffered burns as many as 15 people (25.4%). Chi-Square test results showed that the value of $p = 0.722 > 0.05$ which means there is no significant relationship between age with burns incidence.

Relationship of Worker Education with Burn Injury to Oil Palm Planters at PT X Year 2017

Based on the result of the research, the correlation of education with the burn incidence on the workers showed that from 54 high education people there were 43 people (79,6%) who did not burn and burned 11 people (20,4%), while from 19 people with low education there were 14 people (73,7%) who did not suffered burn and who burned as many as 6 people (26,3%). Chi-Square test results showed that the value of $p = 0.782 > 0.05$ which means there is no significant relationship between education with burn incidence.

Relationship of Working Period of Workers with Burn Injury to Oil Palm Planters at PT X Year 2017

Based on the result of the research, the working relationship with the burn incidence on the workers shows that from 61 people who have worked for ≥ 2 years there are 53 people (86,9%) who did not suffered burn and who burned as many as 8 people (13,1 %), while from 12 people who have worked for < 2 years there were 7 people (58.3%) who did not suffered burns and who suffered burns as many as 5 people (48.3%). Chi-Square test results showed that the value of $p = 0.003 < 0.05$, which means there is a significant relationship between the working period and the incidence of burns.

Relationship of Training of Workers with Burn Injuries to Oil Palm Factory Workers in PT X Year 2017

Based on the result of the research, the correlation between the training and the incidence of burns on the workers shows that from 20 people had attended the training there were 19 people (95.0%) who were not burned and who burned 1 person (5.0%), while from 53 people who had never attended the training were 40 people (75.5%) who were not burned and burned by 13 people (24.5%). Chi-Square test results show that the value of $p = 0.057 > 0.05$ which means there is no significant relationship between training with burn incidence.

Relationship of Worker Knowledge with Burn Injury to Oil Palm Planters at PT X Year 2017

Based on the result of the research, the knowledge relation with the burn incidence on the worker showed that from 27 people with high knowledge there were 25 people (92,6%) who did not burn and who burned 2 people (7,4%), while from 38 people with low knowledge were 38 people (76%) who were not burned and burned by 12 people (24%). Chi-Square test results show that the value $p = 0.031$

<0.05 which means there is a significant relationship between knowledge with burn incidence. Relationship between Workers' Attitudes and Burn Injuries to Oil Palm Factory Workers in PT X Year 2017.

Based on the result of the research, the attitude relationship with the burn incidence on the workers showed that from 49 people with positive attitude there were 40 people (81,6%) who did not burn and who burned 9 people (18,4%), while from 24 people with negative attitude were 20 people (83,3%) who were not burned and who burned 4 people (16,7%). Chi-Square test results indicate that the value of $p = 0.428 < 0.05$ which means there is no significant relationship between attitude with burn incidence.

Relationship of Worker's Action with Burn Injury to Oil Palm Factory Workers in PT X Year 2017

Based on the result of the research, the correlation between the action and the burn incidence on the workers showed that from 32 people whose actions were good there were 31 people (96,9%) who were not burned and burned by 1 person (3.1%), while from 41 people whose actions were less than 32 people (78.1%) who were not burned and who burned 9 people (21.9%). Chi-Square test results showed that the value of $p = 0.001 < 0.05$ which means there is a significant relationship between the action with the incidence of burns.

4.1 Multivariate Analysis

Based on the results obtained that the working period affect the incidence of burns with a value of $p = 0.026$. The period of work has the value $\text{Exp (B)} = 4,065$ means workers who have a working period < 2 years have a chance of burn incident incidence of 4 times greater than the workers whose working period ≥ 2 years. There is an effect of action on burn incidence with p value = 0,023. The action has the value $\text{Exp (B)} = 11.586$ means workers who are less secure measures have the chance of burn incidence 12 times greater than workers with safe measures.

Multiple logistic regression equation models that can predict incidence of burns in coconut factory workers in PT X are as follows:

Information:

P: Probability of burns incidence

X1: working period, regression coefficient 1.403

X2: action, regression coefficient 2,450

a: Constants -3,672

The above equation shows that workers who work less than 2 years and act unsafe have a probability of

55.5% for burns. Meanwhile, workers whose working years > 2 years of safe acting have a probability of 21.40% for burn incidents.

5 DISCUSSION

5.1 Determinant Working Period of Burn Injury to Palm Oil Mill Workers at PT X

The period of work is a factor that can affect the occurrence of accidents due to work. there were 53 people (86.9%) who were not burned and burned 8 people (13.1%), while from 12 people who had worked for < 2 years there were 7 people (58,3%) who not burned and burned as many as 5 people (48.3%). Chi-Square test results showed that the value of $p = 0.003 < 0.05$ which means there is a significant relationship between the working period with the incidence of burns and multivariate results indicate the working period effect on the incidence of burns with a value of $p = 0.026$. The period of work has the value $\text{Exp (B)} = 4,065$ means workers who have a working period < 2 years have a chance of burn incident incidence of 4 times greater than the workers whose working period ≥ 2 years. The result of this research is in accordance with research conducted by Kadarwati (2006) to workers in the production of PT. Luxindo Nusantara there is a relationship between the working period and the incidence of work accident.

Based on various studies with high employment and skills it can decrease the number of accidental accidents because of the vigilance there are accidents getting better in line with the age and duration of work in the workplace concerned. This is in accordance with the statement Suma'mur (2009) which suggests that the experience to be wary of accidents work better according to the increase of working period and long work in the workplace concerned. Inexperienced workers are one of the factors that may affect the occurrence of workplace accidents compared with workers who work > 3 years. According to Notoatmodjo (2012), human behavior is a balanced state between the driving forces and the retaining force. The driving force in this case is the factor that encourages the employee's motivation and retention is the factor that causes the workers' discontent. Therefore, workers should be rewarded as a form of appreciation of safe behavior that has been applied as a form of support to companies in reducing the frequency of workplace accidents. As Geller (2001) argues that appreciation is a positive consequence given to individuals or groups with a view to

developing, supporting, and maintaining the expected behavior.

According to Suma'mur (2009), employment can be the cause of an accident on a job because the new workforce usually does not know in depth about the job and its safety. Meanwhile, long service life coupled with continuous practice will be able to increase knowledge and improve one's skills, work will also be more qualified and quickly completed.

Work experience of a workforce can affect the occurrence of work accidents. Research related to the work experience of 383 cases of work accidents in Hongkong proves that accidents on the hands due to exposure to the engine occurs in the workforce who work less than 1 year. The new workforce does not usually know in depth the ins and outs of work and safety. They also often attach importance to the completion of certain jobs given to them, so that safety does not get enough attention. In addition, many new workers who do not know clearly the way the machine works and safety. There is a new workforce who had an accident when first working using the machine, because not yet know clearly how to use and how to work that is safe and not yet accustomed to using the machine.

The longer a person works the more experience and the higher the knowledge and skills, so that it can mengirangi risk of work accidents. The results of this study show that there is a tendency of oil palm factory workers with a working period of less than 2 years experienced more burns incidents than palm oil mill workers who have worked for more than 2 years. The period of work can affect both positive and negative performance. Giving a positive influence on performance if with increasing length of personal work experience more and more in carrying out its duty. Conversely, will give a negative influence if with increasing length of service will arise habits on the workforce. This is usually associated with work that is monotonous or repetitive.

5.2 Determinant Measures against Burns Events on Palm Oil Millers at PT X

Human behavior in work can create the risks associated with occupational safety. Unsafe behavior is considered to be the result of errors committed by either the worker involved directly. Based on the result of the research, the correlation between the action and the burn incidence on the workers showed that from 32 people whose actions were good there were 31 people (96,9%) who were not burned and burned by 1 person (3.1%), while from 41 people

whose actions were less than 32 people (78.1%) who were not burned and who burned 9 people (21.9%). Chi-Square test results showed that the value of $p = 0.001 < 0.05$ which means there is a significant relationship between the action with the incidence of burns. Multivariate analysis showed that there was an effect of action on burn incidence with p value = 0,023. The action has the value $\text{Exp (B)} = 11.586$ means workers who are less secure measures have the chance of burn incidence 12 times greater than workers with safe measures.

Insecure actions of palm oil mill workers are, among other things, working in a hurry, not checking conveyor funnels, not using PPE, not cleaning spills and dirt quickly, not obeying work instructions, and while working, workers are joking. This unsafe behavior causes burns to workers. Unsafe behavior can be controlled by the supervision of the company, so it is necessary strong support from the company in creating a safe behavior on workers.

Organizational factors in companies have different defense systems in them. Inadequate direct organizational conditions can also damage the defense system resulting in system failures, such as in oil palm factories, ie, lack of strict application of OHS regulations and procedures and supervision of poor safety systems eg the absence of a Work Permit), SOPs only on the part of machinery, and supervision of workers' safety lack of safety training, as well as working environment conditions are a form of the absence of a safety culture within the plant.

The results of this study in accordance with research conducted by Affidah (2011) states there is the influence of unsafe acts against accidents. In Suraji's (2001) study found that the actions of workers who directly cause workplace injuries amounted to 29.8% of which were the use of faulty or defective protective equipment, failure to comply with instructions or regulations that were inadequate, less cautious, overconfident.

Unsafe action is the cause of most of the work accident rate. Based on the theories of Frank E. Bird and Heinrich, each has a different theory but the goal remains the same is to prevent and reduce the incidence of accidents. Based on the theory of Bird who want to break the chain of work accidents by improving the management of a company, while the Heinrich theory who want to break the chain accident work by improving human behavior (Ramli, 2010).

Behavior of mansuia is reflected in the actions they perform at work. In PKS workers are still many who work with haste. Working in a hurry can increase the risk of workplace accidents because of certain workers are less alert when working. There are still

many PKS workers who do not check the expenditure funnel and conveyor cover, it is an unsafe behavior that can also cause work hazards for both workers and companies if the expenditure funnel is blocked can cause a fire or explosion. There are still many workers who have not complied with work instructions, whereas work instructions are made to improve workers' safety and security. Therefore it is necessary to do socialization, make warnings on the wall so as to remind workers to act safe when working.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The conclusions in this study are as follows:

1. There is an age effect on occupational safety and health with burn incidence at Tinjoan palm oil mill worker at PTPN IV Year 2017.
2. There is influence of working period on work safety and health with burn incident at Tinjoan palm oil mill worker at PTPN IV Year 2017.
3. There is no effect of knowledge on occupational safety and health with burn incidence at Tinjoan palm oil mill worker at PTPN IV Year 2017.
4. There is influence of attitudes about occupational safety and health. with the incidence of burns on workers at the palm oil factory Tinjoan PTPN IV Year 2017.
5. There is an effect of unsafe acts with burn incidence at Tinjoan palm oil mill worker at PTPN IV Year 2017.

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