



## Knowledge and Attitudes regarding Compliance with the Use of Personal Protective Equipment for Motor Vehicle Test Workers at the Malang Regency Transportation Service

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### ABSTRACT

The use of PPE is an effort to protect or prevent potential work hazards or accidents. Worker compliance in using PPE is determined by worker knowledge and attitudes. Workers' knowledge will change their actions so that this change in attitude will make workers obey the rules at work. The aim of this research is to analyze the relationship between knowledge and attitudes and compliance with the use of PPE among motor vehicle test officers at the Malang Regency Transportation Service. Quantitative analytical method, cross sectional approach. Total sampling was 30 respondents. Data was taken by filling out questionnaires by respondents and observing. Data analysis was carried out univariately and bivariately using the spss program with the Chi-Square statistical test. The Chi-Square test showed that there was a relationship between knowledge and compliance with the use of PPE (p-value = 0.043), and there was a relationship between attitude and compliance with the use of PPE (p-value= 0.027). The higher a person's level of knowledge and attitude, the more compliant they will be in using PPE.

**Keywords :** Attitude, Knowledge, PPE Use Compliance

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### INTRODUCTION

Occupational Safety and Health (K3) is very important for all workers. In reality, K3 still receives very little attention from the relevant agencies, many workers still pay little attention to their own K3 problems. According to International Labour Organization (ILO) in 2018, every year there are more than 250 million accidents at work and more than 160 million workers become ill due to workplace hazards. Moreover, 1.2 million workers die due to accidents and illness at work.

According to BPJS Employment, from 2017 – 2021 there has been an increase in work accidents. Work accidents can occur due to two things, namely unsafe work behavior and unsafe working conditions. According to the results of Silaban's research (2018), 23 construction workers

had experienced work accidents while working. As many as 20 people are at high risk of work accidents because of the workers' own behavior, such as not wearing PPE. The more workers with good knowledge, attitudes and actions, the fewer workers who are at high risk of work accidents. Vice versa, the more workers who have bad knowledge, attitudes and actions, the more workers who are at high risk for their work. (Agnes, B. P. 2017)

The theory developed by (Green, 1980) states behavior influenced by 3 factors, i.e. factors predisposition, factor supporter and factors pusher. Factor predisposition consists from knowledge, attitude, age, gender, and latest education. Enabling factors consists from the availability of PPE, comfort of PPE, and training. Factor amplifier consists of regulations, supervision and sanctions. (Annisa, R., et. al., 2020)

There are 2 locations for the Malang Regency Transportation Service, namely in the South and North. The Malang Regency Transportation Service has an organizational structure for managing motor vehicle testing which is tasked with carrying out vehicle fitness tests periodically. The South Malang Regency Transportation Service is in Kepanjen, numbering 15 motor vehicle test workers. Then the North Malang Regency Transportation Service was in Karanglo, numbering 15 motor vehicle test workers. Motor vehicle testing is an important part of government efforts to ensure that vehicles on the road meet required safety and emissions standards. There are several Motor Vehicle Testing activities, such as: Pre-Test (Inspection of the front, side and rear of the vehicle, measuring vehicle dimensions), exhaust emission test, brake test, light test and undercarriage test. (Arifin, Z. 2017)

Found some PPE such as: safety helmet, safety goggles, face mask, safety gloves, and safety shoes. However, there are several motor vehicle testing workers at the Motor Vehicle Testing UPT who do not use complete PPE when they work, which can result in the risk of accidents while working. These workers may also face various hazards and risks during their work. Knowledge and attitude factors are also important factors in implementing compliance in the use of PPE because if motor vehicle test workers do not have knowledge about PPE, they will not use PPE when working. So their attitude towards using PPE is lacking and habits of non-compliance with the use of PPE will emerge. The availability of PPE is also a factor in whether workers use PPE or not. (National Civil Service Authority, 2021)

Based on these conditions, researchers are interested in conducting research on how knowledge and attitudes relate to compliance with the use of PPE among motor vehicle test workers at the Malang Regency Transportation Service. (Azzahri, L. M. and K. I. I. 2019)

## METHODS

The research design carried out in this research is cross sectional with saturated sampling technique (total sampling). This research was carried out on motor vehicle test workers at the Malang Regency Transportation Service with a sample of 30 workers. The independent variables in this research are the knowledge and attitudes of motor vehicle testing workers, while the dependent variable in this research is compliance with the use of PPE among motor vehicle testing workers. Data collection using questionnaires and observation sheets. Data analysis was carried out by data tabulation and hypothesis testing. Ho will be tested with a significance level of 0.05 using the application SPSS. The statistical test used is statistical analysis Chi-Square.

## RESULTS AND DISCUSSION

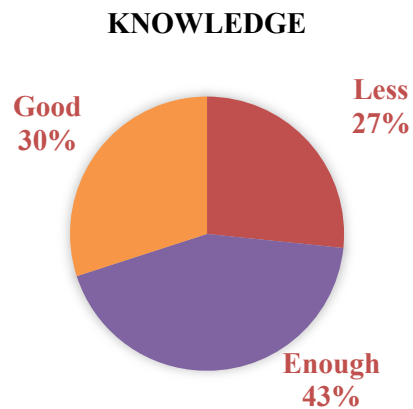
### A. Respondent Characteristics

**Table 1.** Characteristics of PKB Worker Respondents at the Malang Regency Transportation Service

Variable	Category	Amount	Percentage
Age	< 34 Years	12	40%
	> 34 Years	18	60%
	Total	30	100%
Gender	Man	25	83,3%
	Woman	5	16,7%
	Total	30	100%
Last Education	SMA	8	26,7%
	D2	13	43,3%
	S1	9	30,0%
	Total	30	100%

The results of the analysis in table 1 show that the age of most respondents is vulnerable < 34 years, with 20 respondents (66.7%). There were more male respondents than female respondents, namely 25 respondents (83.3%). Then the majority of motor vehicle test workers, 13 respondents (43.3%) were D2 graduates, and 8 respondents (26.7%) had a high school education.

## B. Univariate Analysis

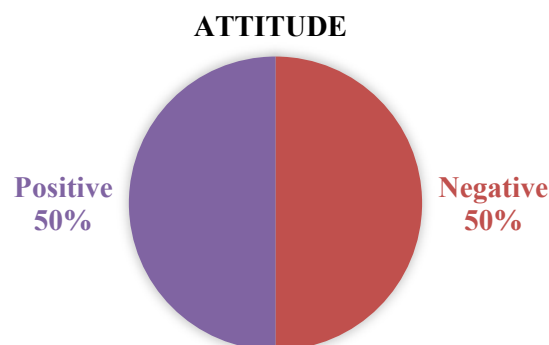


**Figure 1.** Distribution of Respondents based on Knowledge among PKB Workers at the Malang Regency Transportation Service

Based on the results of filling out questionnaires by respondents on the knowledge variable, the results of the analysis in Figure 1 show that the majority of motor vehicle test workers at the Malang Regency Transportation Service are categorized as having sufficient knowledge, 13 respondents (43%), while the minimum is in the inadequate category, 8 respondents. (27%).

Knowledge is a very important factor in shaping a person's behavior. If someone has insufficient knowledge of the potential or sources of danger in their work environment, then that individual will tend to make the wrong decision.

In this study, the majority of workers had good knowledge compared to workers who had less knowledge. This is in line with research by Fairo (2018) where it was found that as many workers had good knowledge about the importance of using personal protective equipment (80%).



**Figure 2.** Distribution of Respondents based on Attitudes of PKB Workers at the Malang Regency Transportation Service

Based on the results of filling out the questionnaire by respondents on the attitude variable, the results of the analysis in Figure 2 show that some of the 30 respondents, namely 15 respondents

(50%) were categorized as having a positive attitude, and some were categorized as having a negative attitude (50%).

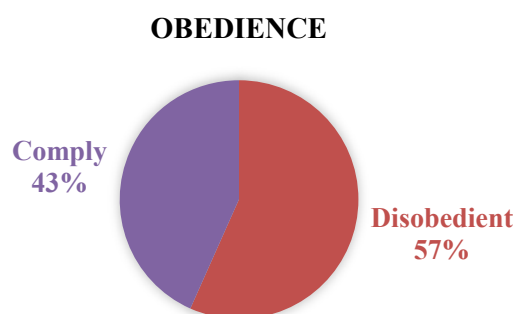
A positive attitude when an individual has a tendency to act is to approach, like, and hope for a certain object. In this research, some workers showed a positive attitude, and some were categorized as a negative attitude.

**Table 2.** Description of the Availability of PKB for PKB Workers at the Malang Regency Transportation Service

No.	PPE	Available
1.	Safety Helmet	✓
2.	Safety Goggles	✓
3.	Half Mask Respirator	✓
4.	Safety Gloves	✓
5.	Safety Shoes	✓

In table 2 it can be seen that there are 5 PPE provided by the Malang Regency Transportation Service when motor vehicle test workers work, namely safety helmet, safety goggles, half mask respirator, safety gloves, and safety shoes.

The availability of PKB for PKB workers at the Malang Regency Transportation Service is in the form of: safety helmet as many as 31 pieces, safety goggles as many as 32 pieces, half mask respirator as many as 30 pieces, safety gloves as many as 50 pieces, and safety shoes a total of 33 pairs. The availability of PPE is a supporting factor in compliance with using PPE to prevent accidents and work risks that occur in the company. If the company does not provide PPE, then the company has endangered its workers from the risk of accidents and diseases that will arise in the work environment.

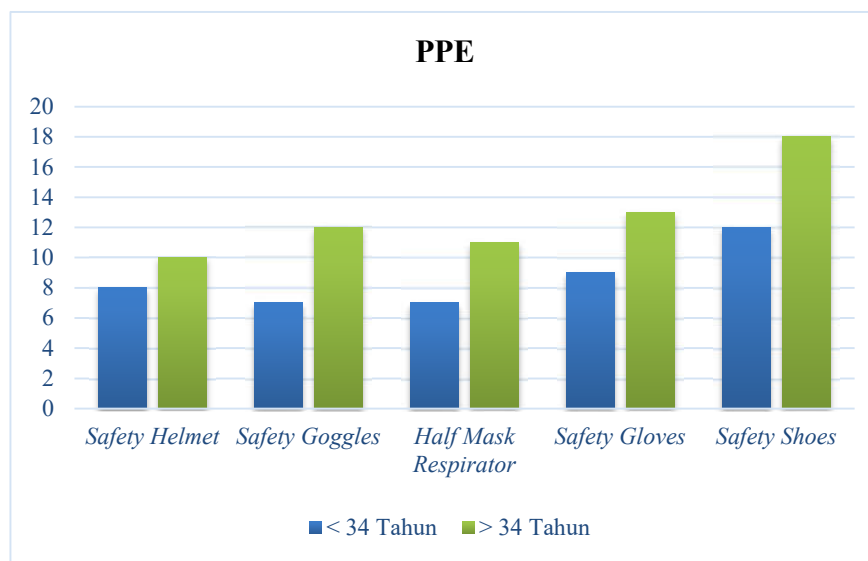


**Figure 3.** Distribution of Respondents Based on Compliance with PKB Use of PKB Workers at the Malang Regency Transportation Service

Based on the results of observations on the variable compliance with the use of PPE, the results of the analysis in Figure 3 show that the majority of workers are categorized as non-compliant in using PPE, 17 workers (57%), while 13 workers (43%) are compliant in using PPE.

Obedience (*adherence*) is a form of behavior that arises as a result of interaction between health workers and patients so that the patient understands the plan and all its consequences and agrees to the plan and carries it out (Ministry of Health of the Republic of Indonesia, 2011). In this study, the majority of PKB workers were categorized as non-compliant with using PPE rather than compliant with using PPE.

The following is an illustration of the use of PPE based on the age of PKB workers at the Malang Regency Transportation Service.



**Figure 4.** Use of PPE by age of PKB workers at the Malang Regency Transportation Service

Based on the results of observations on the use of PPE based on age, the results of the analysis in Figure 4 show that the majority of workers are obedient to using PPE either Safety Helmet, Safety Goggles, Half Mask Respirator, Safety Gloves, and Safety Shoes are workers who are > 34 years old.

### C. Bivariate Analysis

**Table 3.** Test Results Chi-Square The Relationship between Knowledge and Compliance with the Use of PPE among PKB Workers at the Malang Regency Transportation Service

PPE Knowledge	PPE Use Compliance				Total		<i>p-value</i>
	Comply		Disobedient		n	%	
	n	%	n	%			
Good	7	23,3	2	6,7	9	30	0,043
Enough	4	13,3	9	30	13	43,3	

Less	2	6,7	6	20	8	26,7
Total	13	43,3	17	56,7	30	100

Based on table 3, the results of bivariate analysis show that  $p\text{-value} < 0.05$  so it can be seen that  $H_0$  is rejected and  $H_a$  is accepted. So it can be interpreted that "There is a relationship between knowledge and compliance with the use of PPE among motor vehicle test workers at the Malang Regency Transportation Service".

Based on the crosstab in table 3, there are 2 respondents (6.7%) with good knowledge but still not compliant with using PPE, then 9 respondents (30%) who are not compliant with using PPE who are categorized as having sufficient knowledge, and 2 respondents (6.7%) were compliant with using PPE but were categorized as having insufficient knowledge.

According to research from (Ngronggah et al., 2020) which states that the knowledge variable has a significant influence on compliance behavior. Knowledge is one of the incentives to create good attitudes and behavior in order to comply with the use of PPE when working (Ika, P and Anisa, ER et al., 2020).

This research is also in line with research by Livia Assyifa Rachman et al, regarding the level of knowledge of PPE where the results of their research show that the sources have good knowledge because they received supporting information about the benefits of using PPE (Livia, et al, 2020).

The better a person's knowledge, it does not indicate that the person's actions will be better. Increasing a person's knowledge does not always lead to changes in workers' actions, because in the process many workers know but few implement it in real form. This can occur due to the latest educational factor, where the data results show that the majority of those in the category of lacking knowledge, namely high school education, can also be influenced by the habits and culture of each individual.

Based on facts in the field, it is known that workers' knowledge of compliance with the use of PPE is good, but the level of compliance in using PPE while working is still relatively poor. This was proven when researchers conducted research, it was found that many workers did not use PPE when working.

Based on interviews conducted by researchers, Some motor vehicle test respondents have good knowledge but are not yet fully willing and aware to implement compliance in using PPE when working on the grounds that the PPE they get is not appropriate or fits the worker's body size so respondents choose not to use PPE rather than not. comfortable to use while working. However, the rest adhere to using PPE for reasons of safety and comfort when working.

The existence of a relationship between knowledge and compliance with PKB use among PKB workers is in accordance with theory (Notoatmodjo, 2010) which states that knowledge can be

through formal or informal education, for example obtained from training, counseling, experience or other information. A person's compliance must be based on knowledge because knowledge is needed as encouragement in creating a good attitude so that PKB workers can comply with using PPE.

This is in line with research (Hirliansyah, 2013) that good and correct use of PPE is based on workers' knowledge about PPE. If workers have insufficient knowledge of the potential or sources of danger in their work environment, then these workers will tend to make wrong decisions.

As for workers who are still classified as having good, sufficient or poor knowledge, this can be improved by providing socialization about the use of PPE and the risks of not using PPE, and conducting a safety briefing before working hours start. This is an initial effort to encourage worker compliance so that they are encouraged to comply with using PPE.

**Table 4.** Test Results Chi-Square The Relationship between Attitudes and Compliance with the Use of PPE among PKB Workers at the Malang Regency Transportation Service

Attitude	PPE Use Compliance				Total		<i>p-value</i>
	Comply		Disobedient		n	%	
	n	%	n	%			
Positive	10	33,3	5	16,7	15	50	0,027
Negative	3	10	12	40	15	50	
Total	13	43,3	17	56,7	30	100	

Based on table 4, the analysis results show that  $p\text{-value} < 0.05$  so it can be seen that  $H_0$  is rejected and  $H_a$  is accepted. So it can be interpreted that "There is a relationship between attitudes and compliance with the use of PPE among motor vehicle test workers at the Malang Regency Transportation Service".

Based on the crosstab in table 4, there are 5 respondents (16.7%) with a positive attitude category but still not compliant with using PPE, and 3 respondents (10%) who are compliant with using PPE but are categorized as having a negative attitude.

The results of this research are also supported by research conducted by Lidia Sarah Fairyo and Anik Sietyo Wahyuningsih (2018) which shows that attitude has a relationship with project workers' compliance with using PPE and obtaining value  $p\text{-value} = 0.011$  Each individual has a different attitude in dealing with a problem.

Based on the relationship between attitudes and behavior in using PPE, research conducted by Widyaningsih (2018) on predisposing factors and the implementation of PPE use obtained results  $p = 0.03$ . In this research, he believes that a positive attitude obtained from social support and adequate facilities will have an influence on a person's actions.



In this study, respondents who had a positive attitude could not be guaranteed to wear PPE well for several reasons, such as discomfort when worn, fatigue and feeling hot, which made some workers remove PPE. And because there is no supervision, they are indifferent to using PPE. If supervision is carried out well, it will indirectly affect compliance with good use of PPE. This happens because attitude is one of the supporting factors that is very influential in encouraging changes in a person's actions to be better in accordance with Notoatmodjo's theory.

The results of this research indicate that the formation of good attitudes among workers regarding the use of PPE must be carried out by institutions to increase worker compliance. Compliance with the use of PPE in all work processes carried out by workers is to protect the worker's physical body if a work accident occurs and to reduce the risk of minor, serious or fatal injuries. A good attitude towards the use of PPE for workers also has a positive impact on the agency by providing a good image of the agency to partners who work together. This is in line with research conducted by Muhammad Sayuti, Al Muqsith and Arini Nashirah (2021) which stated that 51.8% of respondents had a positive attitude and the rest were negative.

Respondents who have negative attitudes certainly have reasons, according to Sarlito (2017) a person has a negative attitude if he feels he cannot accept something regarding the stimulus, in this case the requirement to use PPE. This is in line with research conducted (Indra Gunawan, 2016) that the role of poor attitudes towards using PPE in workers is caused by factors such as low levels of worker knowledge, where low knowledge can influence careful and reasoned decision making, and the impact is limited.

Research conducted by Lulus Suci Hendrawati, et al (2022) shows that negative worker attitudes are caused by the absence of strict supervision regarding the use of PPE by the company's HSE. This research is also in accordance with the results of Agung Bagus Krisnha Adinata's research that "There is a relationship between the attitude of welding employees and compliance with the use of PPE". This can be interpreted as a good employee's attitude, the more they will understand how to use PPE, conversely, the worse the employee's attitude, the less they will understand how to use PPE in the company, such as when it comes to using PPE.

As for workers who are still classified as having a negative attitude, it can be improved by carrying out supervision, training in the use of PPE must be given great attention, and providing regulations according to SOP when working.

## **CONCLUSION**

Based on the results of research conducted on 30 PKB workers at the Malang Regency Transportation Service, the conclusions reached were: The majority of Malang Regency Transportation Service PKB workers are categorized as having sufficient knowledge, it shows positive attitude, and there are also negative attitude categories. The 5 PPE that have been provided

by the Malang Regency Transportation Service for PKB workers are safety helmets, safety glasses, half mask respirators, safety gloves and safety shoes. Then The majority of PKB workers at the Malang Regency Transportation Service are categorized as non-compliant in the use of PPE. And There is a relationship between knowledge and compliance with the use of personal protective equipment among PKB workers at the Malang Regency Transportation Service. Then there is a relationship between attitude and compliance with the use of personal protective equipment among PKB workers at the Malang Regency Transportation Service.

## REFERENCE

- Aditama, S. 2019. *Evaluation of Unsafe Act Behavior and Unsafe Conditions in Multi-Storey Shophouse Building Construction Projects in Palangka Raya*(058k) 2. Research Methodology Research Area and Research Time Data Collection, 7(CoNTekS 7), 24–26.
- Agnes, B. P. 2020. *Factors That Influence the Use of Personal Protective Equipment (PPE) among Bamboo Basket Crafters in Sigodang Barat Village, Panei District, Simalungun Regency*. Thesis, University of North Sumatra. Thesis, University of North Sumatra, 7–37.
- Annisa, R., Manullang, H. F., & Simanjuntak, Y. O. 2020. *Determinants of Compliance with the Use of Personal Protective Equipment (PPE) for PT Workers. X Development Projects in 2019*. Journal of Public Health Research, 2(2), 25–39.
- Arifin, Z. 2019. *Instrument Criteria in Research*. Jurnal THEOREMS (The Original Research of Mathematics), 2(1), 28–36.
- National Civil Service Authority. 2021. *The Influence of Innovation Capability on Company Performance*. Applied Chemistry International Edition, 6(11), 951–952., 2013–2015
- Azzahri, L. M. and K. I. I. 2019. *The Relationship between Knowledge About the Use of Personal Protective Equipment (PPE) and Compliance with the Use of PPE among Nurses at the Kuok Health Center*, PREPOTIF Public Health Journal, 3(1), p. 50–57.
- BPJS of Employment. (2019). *Work accident*. Jakarta
- Republic of Indonesia Ministry of Health. 2016. *Age classification by category*. Jakarta: Directorate General of Health Care.
- Edigan, F. 2019. *The Relationship Between Work Safety Behavior and the Use of Personal Protective Equipment (APD) among PT Employees*. Surya Agrolika Reksa Di Sei. wet Journal of Science, 19(2), 61-70
- Fahrudin, M. 2019. *Factors Associated with Compliance with the Implementation of Standard Operational Procedures (SOP) for Corridor I Rapis Transit (BRT) Bus Drivers Semarang*. Journal of Public Health. January 2018; 6(1): 627-36
- Fairyo, L. S., & Wahyuningsih, A. S. 2019. *Compliance with the Use of Personal Protective Equipment for Project Workers*. Higeia Journal Of Public Health Research And Development. 35-42.
- Gunawan, I. 2019. *The relationship between knowledge, attitudes and motivation and the behavior of using personal protective equipment in production workers*, in J of Public Health, hal. 80-85

- Green, Lawrence, 2016. *Health Education: A Diagnosis Approach*, The John Hopkins University, Mayfield Publishing Co.
- Heinrich, H. W., & Petersen, D. 2016. *Industrial Accident Prevention*. New York: Mc. Graw-Hill Book Company
- Ika, P., & Anisa, E, R. 2020. *Level of Knowledge and Behavior of the Wonosobo Regency Community Regarding Covid-19*. Journal of Health Sciences, Vol.10, No.1, May, 2020.
- International Labour Organization (ILO). 2018. *Work-Related Accidents*. Jakarta: International Labour Organization.
- ISO 45001. (2018). *Occupational Health and Safety Management Systems Requirements with Guidance For Use*. London: BSI Standards Limited.
- Kusuma, I. 2004. *Factors related to the behavior of using Personal Protective Equipment among PT Die Casting workers. X Year 2004*. Thesis Prog
- Lestari, R., & Warseno, A. 2021. *Analysis of Factors Associated with Worker Compliance Using Personal Protective Equipment*. *Lighthouse Health Journal*, 4(2), 26–33.
- Livia, A., Fajar, Y., Ahmad, D., Mia, A., & Tony, D., 2020. *The Relationship between Knowledge and Attitudes towards the Behavior of Using Personal Protective Equipment at PT Sarandi Karya Nugraha Sukabumi*, Journal of Health and Science Integration (JIKS), 2(2)
- Ngronggah et al. 2020. *Compliance with Mask Use as an Effort to Prevent COVID-19 Disease*. 2020;10(1). Number Per.08/Men/VII/2015 concerning Personal Protective Equipment. Indonesia, Regulation of the Minister of Manpower and Transmigration of the Republic. Jakarta : s.n., 2010.
- Notoatmodjo, S. 2014. *Health Education and Behavior*. Jakarta : Rineka Cipta.
- Republic of Indonesia Minister of Manpower Regulation No. PER.03/MEN/1998 concerning Procedures for Reporting and Inspecting Accidents
- Minister of Manpower and Transmigration Regulation No. 13 of 2019 concerning Threshold Limit Values (NAB) for Physical Factors and Chemical Factors in the Workplace.
- Government of the Republic of Indonesia. 2014. Law of the Republic of Indonesia Number 1 of 1970 concerning Work Safety. President of the Republic of Indonesia: Jakarta.
- Rahmawati, R. 2019. *The Relationship between Knowledge, Education and Training and the Level of Compliance with the Use of Personal Protective Equipment (APD) among Street Sweepers in Bangkinang Kota District in 2018*. Volume 3, Number 1 April 2019. PREPOTIF Public Health Journal
- Rogers, C. 2014. *Behavior change theory*. Psychology. United States of America
- Sayuti, M., Muqsith., & Nashirah, A. 2021. *Factors Affecting Employees in the Use of Personal Protective Equipment at PT. X*. Endurance Journal: Scientific Study of Health Problems. Vol 5(1) February 2020 (1-6).