Proceedings
The 2nd International Multidisciplinary Conference 2016 November
15th , 2016, Universitas Muhammadiyah Jakarta, Indonesia
Triana Srisantyorini dan Sri Yuniati, Ear Protective Equipment Usage Behavior In Labor
Grinding Parts Buffing PT. X Tangerang:
ISBN 978-602-17688-9-1

EAR PROTECTIVE EQUIPMENT USAGE BEHAVIOR IN LABOR GRINDING PARTS BUFFING PT. X TANGERANG

Triana Srisantyorini,Sri Yuniati

Public Health Department, Faculty of Medicine and Health, University of Muhammadiyah Jakarta

trianasrisantyorini@yahoo.co.id

Abstract

The amount of used machine tools for the production process has the potential to become a source of noise, so it is a risk factor for health problems especially to the organ of hearing. Use of Personal Protective Equipment Ear (PEE) aims to protect workers and the prevention of occupational diseases of the potential dangers of noise. The purpose of this study to determine the behavior of the use of PEE on the labor section Grinding Buffing PT. X Tangerang District.The study was a type of non- experimental observational methods. This study using cross sectional approach. This research was conducted at PT. X section Grinding Buffing Balaraja - Banten. The population of 370 people and the sample in this study were 110 people. Statistic test analysis using Chi Square (X2) with α = 0.05. Results showed that (67.3 %) of workers are well behaved (using PEE), the largest age < 40 years (96.4 %), the highest education at the higher education level (≥ SLTA) (57.3 %), long working majority ≤ 3 years (80 % 0), good knowledge of the PEE (91.8 %), negative attitude (50.9 %), workforce getting training (84.5 %), and employment stating their supervision during work as much (98.2 %). The results of the bivariate analysis found age, length of employment, education, knowledge, attitudes, and supervision there is no significant relationship with the behavior of the use of PEE (p value > 0.05), while the variable contained significant relationship is with the training variable p value = 0.010.Suggested to the company on a regular basis to provide counseling to work on the benefits of using the PEE and the impact of workplace noise, so the job is always to use PEE at work .

***Keywords** : Protective Equipment Ear, Knowledge, Attitude, Behaviour*

INTRODUCTION

Companies run their activities Always hearts desire success, either Form Production Results and Service. To review the HAL realize the required workplace Ahealthy and safe, so it will not result of illness or accident occurred employment That led Decrease Production Results And poor Client Service Consumer (Sumbung, inWibowo, 2010: 1).

Workplace hazards, either direct or indirect danger to the safety and health of workers. Noise is one of the physical hazards in the workplace. Noise according to Minister of Manpower Regulation No. 13 / Men / X / 2011 is unwanted sound that comes from tools and production processes at a certain level can cause health problems and hearing.

ISBN 978-602-17688-9-1

In industrial activities, can not be separated from the mechanical process, which from the mechanical process will generate noise, even the noise that occurs beyond the permitted threshold. According to the National Institute for Occupational Safety and Health (NIOSH) documented by Hazard Evaluation and Technical Assistance Branch (HETAB) explained that the grinding machine can generate noise levels of 80-104 dB in manufacturing pipes in West Virginia. Then from various investigative National Institute for Occupational Safety and Health (NIOSH) as follows: 95-108 dB paper cutting machine, the company in the area of cleaning, polishing 88-113 dB, glass factory 79-92 dB, 115 dB manufactur workshop, police training shoot 157-160 dB (Marji, 2013: 45). The primary effect of noise on health is the damage to the sense of hearing. Noise high levels can cause short-term effects and long-term hearing. The higher the intensity of the noise, the potential to cause a wide range of hearing loss is temporary or permanent will be even greater. (Waldron, 1990 in Anies 2004: 130).

In Indonesia, according to Minister of Manpower Regulation No. 13 / Men / X / 2011 on Threshold Limit Values Physical and chemical factors at work mentioned that the noise intensity permitted in the workplace is 85 dB for a working time of 8 hours per day.

PT. X is a company engaged in the footwear industry and is located in the district of Tangerang, Banten. The company has a parts department Stockfitting Grinding Buffing Shoes outsole component that processes with the number of 370 employees who are exposed to noise, producing for 24 hours applying shift (shift). (HRD PT. X, 2015). In the process of production of the components of the shoe outsole, the workers were not out of danger noise. Danger of noise in PT. X on the Grinding Buffing among others, comes from the work equipment and work processes. Based on data from the measurement noise PT. X 2015, Buffing Grinding noise level is quite high, reaching more than 90 db. Buffing Grinding noise in the area of the high comes from supporting equipment that is used as the sound of motorcycle engines Grinding Buffing (HSE PT. X, 2015).

METHODOLOGY

This research is descriptive quantitative with cross sectional data collection methods. The study was conducted in Section Grinding Buffing PT. X. The population of this research are all workers employed in the Department Stockfitting Buffing Grinding parts totaling 370 workers. The research sample of 110 respondents selected by systematic random sampling.

RESEARCH RESULT

The results of the study can be seen in the following table below:

Table 1 Results Univariate analysis of each variable on the Labor Part Grinding Buffing PT.X

No.	Variable	Categori	n	%
.	Behavior of Use APT	Using APT	74	67,3
		No using APT	36	32,7
.	Respondents age	≥ 40 Years	4	36
		< 40 Years	106	96,4
	Education	High (≥SLTA)	63	57,3

.		Low (≤SLTP)	47	42,7
	Length of working	> 3 Years	22	20,0
.		≤ 3 Years	88	80,0
	Knowledge	Good	101	91,8
.		Enough	9	8,2
	Attitude	Positive	54	49,1
.		Negative	56	50,9
	Training	Ever	93	84,5
.		Never	17	15,5
	Supervision	Yes	108	98,2
.		No	2	1,8

According to the table 1 we can see that respondents use PEE behave at work as much as 67.3% of respondents were aged <40 years as much as 96.4%, highly educated respondents (≥ SLTA) 57.3% of respondents with a long work ≤ 3 Years 80.0%, knowledge of the respondent of 91.8%, the negative attitudes of respondents to the use of PEE 50.9%, of respondents regarding the statement was never a declared training as much as 84.5% by respondents and as many as 98.2% of respondents said there is oversight of the use of PEE.

Table 2Results Bivariat Each variable to Behavior Using PEE on Employment Section Grinding Buffing PT. X

Variable	*Categori*	*Behavior Using Protective Equipment Ears*				*Total*		*P - Value*
		Using PEE		*No Using PEE*				
		n	*%*	*n*	*%*	*n*	*%*	
Age	*≥ 40 Tahun*	*4*	*5,4*	*0*	*0*	*4*	*3,6*	***0,155***
	< 40 Tahun	*70*	*94,6*	*36*	*100*	*106*	*96,4*	
	Total	*74*	*100*	*36*	*100*	*110*	*100*	
Length of working	*> 3 Tahun*	*16*	*2,6*	*6*	*16,7*	*22*	*20*	***0,542***
	≤ 3 Tahun	*58*	*78,4*	*30*	*83,3*	*88*	*80*	
	Total	*74*	*100*	*36*	*100*	*110*	*100*	
Education	*Tinggi (≥ SLTA)*	*40*	*54,1*	*23*	*63,9*	*63*	*57,3*	***0,328***
	Rendah (≤ SLTP)	*34*	*45,9*	*13*	*36,1*	*47*	*42,7*	
	Total	*74*	*100*	*36*	*100*	*110*	*100*	
Knowledge	*Baik*	*69*	*67,9*	*32*	*33,1*	*101*	*101,0*	***0,434***
	Cukup	*5*	*6,1*	*4*	*2,9*	*9*	*9,0*	
	Total	*74*	*100*	*36*	*100*	*110*	*100*	
Attitude	*Postif*	*38*	*51,4*	*16*	*44,4*	*54*	*49,1*	***0,497***
	Negatif	*36*	*48,6*	*20*	*55,6*	*56*	*50,9*	
	Total	*74*	*100*	*36*	*100*	*110*	*100*	
Training	*Pernah*	*58*	*78,4*	*35*	*97,2*	*93*	*84,5*	****0,010***
	TidakPernah	*16*	*21,6*	*1*	*2,8*	*17*	*15,5*	

	Total	*74*	*100*	*36*	*100*	*110*	*100*	
Supervision	*Ada*	*72*	*97,3*	*36*	*100*	*108*	*98,2*	***0,320***
	Tidak Ada	*2*	*2,7*	*0*	*0*	*2*	*1,8*	
	Total	*74*	*100*	*36*	*100*	*110*	*100*	

In Table 2 above shows that as many as 94.6% of respondents aged <40 years using PEE behave at work more compared with respondents aged ≥ 40 years of as much as 5.4%. Statistical test results obtained p-value 0.155 means that there is no significant relationship between age and hearing protection tool use behavior.

Respondents who behaves use PEE to work ≤ 3 years old is 78.4% more as compared to respondents who have a long work> 3 years of 21.6%. Results of statistical test p-value 0.542 means there is no significant relationship between length of employment with the behavior of the use of PEE.

Highly educated respondents (≥ SLTA) 54.1% more as compared to less educated respondents (≤ SLTP) 45.9% who behaves using PEE. Results of statistical test p-value 0.328 means that there is no significant relationship between education with the usage behavior of PEE. Respondents who have a good knowledge of as much as 67.9% more compared with respondents who have sufficient knowledge of 6.1% in the behavior using APT. Statistical analysis showed a p-value 0.434 means there is no significant relationship between the knowledge of the behavior of the use of PEE.

Respondents who have a positive attitude 51.4% more compared to respondents who had a negative attitude that is by 48.6% but using PEE. The statistical results p-value is 0.497 means there is no significant relationship between attitudes and behavior of the use of PEE.

Respondents were getting training as much as 78.4% more than the respondents who claimed never to have training 21.6% but using PEE. The result of chi square statistic in mind that the 95% significance level obtained p-value = 0.010 (p <0.05), meaning that there is a significant relationship between training and the usage behavior of PEE. The result of the calculation of risk estimate obtained OR = 104 (95% CI 0.013 to 0.815). That is, respondents who had attended the training had an opportunity to 104 times to behave using ear protective devices compared to respondents who were never trained.

Respondents who declared his supervision there more that use PEE in the amount of 97.3% compared with respondents who expressed no supervision is as much as 2.7%. Results of statistical test p-value 0.320 means there is no significant relationship between behavioral surveillance with the use of PEE.

DISCUSSION

Behavior Using Protective Equipment Ear, the study states that use PEE respondents currently working as much as 67.3%, in this case, not all workers use APT at work. In contrast to the results of research conducted by Sumbung (2000) found the percentage of workers using PPE by 27.9% and the workers were not using PPE amounted to 72.1%. Behavior is a function of the interaction between an individual and his environment, which means that both directly determines the behavior (Thoha 2003 in M.Iqbal: 57). Behavior using PEE included in health behavior by Becker (1979) healthy behaviors (heathy behavior) is the behavior associated with the effort to maintain and improve health in order to avoid various diseases and health problems (Notoatmodjo, 2003: 49).According to the Occupational Safety and Health Administration (OSHA) Personal Protective Equipment (PPE) is a tool used to protect workers and of injuries or illnesses caused by contact with a hazard in the workplace, whether it is chemical, biological, radiation, physical, electrical, mechanics and others. In the hierarchy of control accidents, the use of PPE is the last option when initial technical and administrative controls have been implemented to the maximum but the danger is still high risk. PPE used in this study is based on the potential dangers of workplace noise that Ear Plug.

Statistical test results obtained by using univariate methods characteristic of the age of respondents surveyed, most are respondents aged <40 years of the 106 (96.4%). Based on the results of the bivariate analysis between the ages against the behavior of the use of PEE obtained p value = 0.542 which means that age do not have a meaningful relationship / significant to the behavior of the use of PEE. This is consistent with the results of research Kurniati (2013) which showed that no significant relationship between age of respondents with workers adhering to the use of PPE with p value 0.800 on significance (α) = 0.05 (2013: 62) .Age or age is a time unit that measures the time of any object or creature, both living and dead. According Suma'mur 1997 in Kurniati (2013: 62) young workers have a high emotional factor. While at the nerve of old age such as tremor in the workforce will decrease productivity and have a tendency to an accident or occupational disease. Old age labor force has began to decrease the level of accuracy, the company that requires skill. The results of this study are not in accordance with the opinion of Notoatmojo (2003) in the theory of the Green, that behavior is influenced by factors of predisposition or the underlying factors that facilitate or to the occurrence of certain behavior. Where are the presdisposisi factor is the age.

Length of working,based on research done that long working respondents most respondents have a working time ≤ 3 years (80%). Bivariate analysis results obtained p value = 0.542 which means the length of employment does not have a meaningful relationship / significant to the behavior of the use of PEE. This is not in line with the results RahmanHapidin (in Kurniati 2013: 63) which suggested a significant association between long working with the level of compliance of PPE usage. Length of work related to work experience. Based on the old labor research operation of up to 5 years have a high productivity, and will decrease until the working period of 8 years. But then after the eighth year working prouktifitas will slowly increase again (Suma'mur 1997, in Kurniati: 62). Increased service life of a person would affect the quantity and quality of work. The longer a person works then they will be more careful in their work because they are already aware of the risks derived from work if inadvertently. One's experience in the work can be obtained based on the life of someone, the longer working, the experience gained will be more.

Education,based on the results of the study respondents with higher education (≥ SLTA) as much as 57.3%). Bivariate analysis results obtained p value = 0.328 means not having a meaningful relationship / significant to the behavior of the use of PEE. In contrast to research conducted by Kurniati in 2013 were obtained p value = 0.002 which means there is a significant relationship between education workers using PPE compliance. Results of research conducted is not in accordance with the opinion of Suma'mur (1997 in Kurniati: 63), which says that the level of education a person has an influence in the way of thinking and acting in the face of job with basic education and skills were very limited and poor health tend will affect the productivity of labor

Based on the study respondents who have a good knowledge of as much as 91.8%. Tests on the level of knowledge of the behavior of the results obtained from the use of PEE bivariate analysis p value = 0.434, which means that there is no relationship bernakna on the usage behavior of the respondents were knowledgeable PEE good with less knowledgeable respondents either. Green (1980) points out that knowledge does not always lead to behavior change, although more positive relationship shown. However this is not in accordance with the results of the study by Wibowo (2010: 79), which states that there is a significant relationship between the level of knowledge of the behavior of the use of PPE with the p value of 0.000. Knowledge can be gained from education, both formal and informal education. When seen from the results of the study, the majority of respondents have a good knowledge of 91.8%, while respondents were knowledgeable enough at 8.2%. As Notoatmojo opinion stating that the domain knowledge is very important for the formation of a person's actions or behavior. This opinion was also expressed by Ramsey, 1978 (Wibowo, 2010: 88) who argued that knowledge is a very important factor for the formation of a person's behavior, when workers have less knowledge of the potential or the source of the danger inherent in their work environment, then the individual will tend to make a wrong decision, in this case the behavior of the use of PPE. Meanwhile Notoatmodjo (1983) says that behavior based on knowledge will be more durable (long lasting)

compared with behavior that is not based on knowledge. The higher a person's knowledge of expected behavior will also be getting better

Attitude, the results were obtained information that the respondents who had a negative attitude towards the use of PEE more as many as 50.9%. The test results bivariate p value = 0.497 means that showed no significant association between the use of PEE behavior proportion of respondents who become negative and positive. According Notoatmodjo (1993), which states that the attitude is not necessarily an action or activity, but predisposes action behavior. According to WHO (in Notoatmodjo, 1993) expressed the attitude will be followed by a course of action based on the amount of one's experience.

The results showed respondents who have received training on PEE as much as 84.5%. Respondents who say it is mandatory to attend training on PEE 64.5%. Respondents also reported receiving training annually as much as 84.5%, and stating the training given by the team Safety / HSE as much as 84.5%. While respondents stated first receive training in PEE is the first time you sign responen works 84,5%. The results of the bivariate analysis between the training on the use of PEE's behavior was obtained p value = 0,010 which means that training has a meaningful relationship / significant to the behavior of the use of PEE. The results are consistent with research conducted by Netty in 2007 (in Wibowo, 200: 89) p value = 0.004 which means there is a significant relationship between training and use of PEE. Training is all activities designed to help improve workers acquire the knowledge, skills and improve attitudes, behaviors required to perform their jobs well that now it is responsible so that organizational goals can be achieved (Atmodiwiro 2002 in M.Iqbal: 63). Results of this study was in line with the views expressed by Bird and Germain (1996 in Wibowo, 2010: 89), that the real training shows the factors affecting workers in the use of personal protective equipment. Appropriate training will lead to performance more efficiently, accidents can be eliminated or reduced, employee morale and team work will increase, as well as increasing employee job satisfaction, work will be easier, employees will be more flexible and adaptable, and can adjust to fulfillment law for certain types of training which are the responsibility of management.

The research result shows that respondents who expressed no supervision in the use PEE to labor 98.2%. Statistical test results obtained p-value 0.320 means there is no significant relationship between supervision in the use of PEE. This is not in line with the research that has been done Wibowo (2010: 81) states there is a relationship between behavioral surveillance with the use of PPE with the p value of 0.000. In contrast to research conducted in 2007 Netty obtain p = 0.268 which shows that there is no significant relationship between the variables of supervision with the use of PPE by the respondent. This suggests that workers to be able to behave using PEE likely have a heavy reliance on supervision performed. Although according to Miller Kurniati 1980 (2013: 66) classifies supervisory been linked to discipline workers to use PEE obedient and to give strength (reinforcing factor). This factor that can strengthen a person on the expected behavior.

CONCLUSION

An overview of the use of PEE's behavior in a study of 110 respondents, amounting to 67.3% of good behavior in the use of PEE. Results showed the largest age <40 years (96.4%), the highest education at the higher education level (≥ SLTA) (57.3%), length of work most ≤ 3 years (80%), good knowledge of the PEE (91.8%), negative attitude (50.9%), workforce getting training (84.5%), and employment stating their supervision during work as much (98.2%). The results of the bivariate analysis found age, length of employment, education, knowledge, attitudes, and supervision there is no significant relationship with the behavior of the use of PEE (p value> 0.05), while the variable contained significant relationship is variable with a value of training p value = 0,010.

Based on the above conclusions, the suggestions for the company as follows: a).To the Grinding Buffing needs to be increased awareness of use PEE to workers, companies are required to conduct regular training on PEE so that workers' awareness is increasing. b).To Improve the use of PEE on

labor PT. X section Grinding Buffing is a way to increase supervision on the use of PEE which has actually been done, but not routine. Reinforce the existing legislation with sanctions and respect for workers and improve the knowledge and understanding of personal protective equipment, the potential hazards as well as awareness of the importance comply with regulations that have been issued by the company, to ensure the safety and health and the working environment. c).Knowledge is of great influence on the behavior of workers in the use of PEE, and therefore the company should make greater efforts to improve the knowledge workers of the PEE. This can be done with safety posters and socialization or counseling about the importance of using PEE workplace.

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