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Workplace Noise Hazard Education at UD Riwood Sidoarjo

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A B S T R A C T

Noise is a problem that is often found in every industry. The use of machines and tools that support the production process has the potential to cause noise. Noise is the unwanted sound of a business or activity in a certain level and time that can cause disturbances to human health and environmental comfort. UD RiWood is a wood industry in Sidoarjo district that produces goods in the form of pallets. Based on the identification results, there are noise hazards in the production process caused by production equipment. Many workers are not aware of this so that the socialization of noise hazards in the workplace is carried out. Educational activities use the lecture socialization method by delivering noise hazard material, interactive discussions, and providing educational media in the form of posters attached to the workplace area. Practitioners also use the interview method before and after using a test interview instrument (pre-test and post-test). The purpose of this educational activity is to increase workers' knowledge and awareness of the dangers of noise in the workplace. The results of the educational activities that have been carried out show that there is a significant increase in the results of the previous pre-test. The success indicator of these educational activities is the increase in general knowledge about occupational safety and health and related to the dangers of noise in the workplace which is measured by evaluation through a post-test conducted by practitioners.

INTRODUCTION

According to PP No. 50 of 2012 concerning SMK3 Occupational Safety and Health is all activities to ensure and protect the safety and health of workers through efforts to prevent work accidents and occupational diseases. Several factors affect the condition of workers in the workplace, namely physical, chemical, biological and ergonomic factors. The physical condition of the workplace environment where workers do their daily activities has direct and indirect hazards for the safety and health of workers, one of which is noise (Rejeki, 2015). Noise is a problem that is often found in every industry. The use of machines and tools that support the production process has the potential to cause noise. Noise is an unwanted sound from a business or activity in a certain level and time that can cause disturbances to human health and environmental comfort (Decree of the Minister of LH No. 48 of 1996).

The limit of exposure to noise is set at a threshold value of 85 dB for 8 hours per day (International Labor Organization, 2013). Noise-induced hearing loss refers to a decrease in sensitivity to sound from mild to severe depending on the level of cell damage in one or both ears. Hearing loss occurs gradually. It starts with a temporary effect of noise on hearing and recovery occurs quickly after work in the noisy area is stopped. However, continued work in a noisy area will result in permanent and irreversible deafness.

Workers are often unaware of this. Noise can also cause various other health problems to workers such as cardiovascular dysfunction, respiratory changes, annoyance, sleep disturbance, and influence on physical and mental health.

UD. RiWood is a wood industry in Sidoarjo district that produces pallet goods. According to Priambada (2017) a pallet is a foundation or foothold for goods. Usually there is a container that is used as a base for transporting goods so that the goods being transported are not damaged by water. Pallet also functions as a base or foundation for goods to facilitate removal using a forklift. Pallet is also used for packaging items that have a large weight such as machines. Wood raw materials used by UD. RiWood is a raw material supplied from Malang and Trenggalek. The wood used is mahogany and sengon wood. The pallet production process consists of unloading wood raw materials from trucks, measuring and making pallet patterns according to orders, cutting wood, assembling wood into pallets, smoothing pallets, and loading finished pallets into trucks. The source of noise generated in the production process is from several machines, namely in the cutting process using a saving machine, the assembly process using a nail shooting machine and the smoothing process using a grinding machine. Potential noise hazards can occur in each of these production processes.

The results of field findings and interviews with workers, it was found that workers still did not use PPE completely when working, namely only using masks. Therefore, researchers are interested in conducting noise hazard education at UD Riwood Sidoarjo. The purpose of educational activities is to increase workers' knowledge and awareness of the dangers of noise in the workplace so as not to cause occupational diseases (PAK).

METHOD

Educational activities were carried out at UD. RiWood which is a pallet manufacturing industry located on Jl. Anusapati, Sawotratap, Gedangan District, Sidoarjo Regency in July. The targets of this socialization activity are the owner and all UD workers. RiWood. Educational activities use the lecture socialization method by delivering noise hazard material in the workplace, interactive discussions, and providing educational media in the form of posters attached to the workplace area. Practitioners also use interview methods before and after using test interview instruments (pre-test and post-test) to find out how much workers understand the dangers of noise in the workplace.

RESULT AND DISCUSSION

Educational activities on the dangers of noise in the workplace begin with preparation, namely coordinating with the company owner if education will be carried out to workers so that free time is given to workers to participate in educational activities. Furthermore, the preparation of educational materials

and media that will be used is carried out, aiming to facilitate practitioners when explaining to workers. Educational activities use A3-sized poster print media containing the definition of noise, the permissible value of noise exposure, the impact of noise on health, and the controls that can be given. In addition, the practitioner also explained the importance of occupational safety and health for workers and the importance of using Personal Protective Equipment (PPE) when working. Before conducting education on workers, a pre-test instrument was first given, the purpose of which was to find out how much knowledge workers had regarding the dangers of noise. And after carrying out education, workers are given a post-test instrument to determine the increase in workers' knowledge about the dangers of noise after socialization.

The following is the data of pre-test and post-test results.

a. General Description of Respondents

General description of participants in noise hazard education at UD. RiWood. The following is the distribution of participants based on the characteristics of the respondents.

Table 1. Respondent Characteristics

No.	Respondent Characteristics	Category	Number (n)	Percentage (%)
1.	Gender	1. Male	10	100
		2. Female	0	0
2.	Age	1. 20 – 29 Years	3	30
		2. 30 – 39 Years	6	60
		3. 40 – 49 Years	1	10
3.	Length of Service	1. < 6 Years	9	90
		2. ≥ 12 Years	1	10
4.	Length of Work	1. < 8 hours	10	100
		2. ≥ 8 hours	0	0

b. Overview of General Knowledge of Occupational Safety and Health

Table 2. Overview of General Knowledge of Occupational Safety and Health

No	Workplace Area	Pre – Test Result	Post- Test Result
1.	Knowledge Distribution on Personal Protective Equipment	90%	100%
2.	Distribution of Knowledge on the Importance of Personal Protective Equipment	80%	100%
3.	Distribution of Knowledge on Occupational Safety and Health (OSH)	60%	100%
4.	Distribution of Knowledge on the Importance of Occupational Safety and Health (OSH)	70%	100%
5.	Distribution of Knowledge on the Importance of Minimizing the Occurrence of Work Accidents	60%	100%
6.	Knowledge Distribution on the Importance of Maintaining Health at Work	90%	100%
7.	Knowledge distribution on the belief in the long-term effects of health	80%	100%

c. Knowledge about Noise

Table 3. Overview of Knowledge about Noise

No.	Workplace Area	Pre-Test Result	Post-Test Result
1.	Distribution of Knowledge of Noise Terms	60%	100%
2.	Distribution of Workers Sensitive to Noise	60%	100%
3.	Distribution of Workers Who Experience Comfort Due to Noise	40%	100%
4.	Distribution of Workers Who Experience Hearing Loss Due to Work Equipment	0%	100%

5.	Distribution of Knowledge on Noise Hazard	50%	100%
6.	Distribution of Knowledge on Noise Causing Occupational Diseases	80%	100%
7.	Distribution of the Importance of Using PPE in the Form of Earplugs	50%	100%
8.	Distribution of the Importance of Using Earplugs at Work	30%	100%
9.	Distribution of the Importance of a Quiet Workplace	30%	60%
10.	Distribution of Workers' Experience of Noise Causing Earache	10%	100%

Table 1. About the distribution of respondent characteristics shows information that all participants are male. Based on the characteristics of respondents in the age category, it shows that workers with ages ranging from 20 to 29 years are 3 people (30%), 30 to 39 years are 6 people (60%), and 40 to 49 years are 1 person (10%). According to the characteristics of the respondents, the working period of 0 - 6 years amounted to 9 people (90%) and the working period of 7 - 12 years amounted to 1 person (10%).

The results of the educational activities that have been held show that there is a significant increase in the results of the previous pre-test. This includes all topics of educational material. The success indicator of the activity is the increase in general knowledge about Occupational Safety and Health and related Noise Hazards in the Workplace as measured by evaluation through a post-test conducted by practitioners. The provision of material is also complemented by posters that have been made affixed to the work area of UD. RiWood. The evaluation results of this educational activity are in line with the statement of Notoadmodjo (2012), stating that in promotional media, the message is intended to influence others, or the message is to appeal to the target audience so that they accept and implement the ideas we convey. In addition, educational activities run smoothly and are conducive.

CONCLUSION

Educational activities are carried out so that workers can know the dangers of noise, which is one of the potential hazards at UD.RiWood. The effect of noise exposure at high intensity is temporary or permanent hearing loss. The higher the noise intensity and the longer the time exposed to noise, the more it will affect hearing. For this reason, it is necessary to prevent and control potential hazards by rotating working hours so that workers are not in the workplace temporarily.

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REFERENCES

- Hidup, K. N. L. (1996). *Keputusan Menteri Negara Lingkungan Hidup No. 48 Tahun 1996 Tentang: Baku Tingkat Kebisingan*. Keputusan Menteri Negara Lingkungan Hidup, 48.
- Peraturan Pemerintah Republik Indonesia Nomor 50 Tahun 2012 Tentang Penerapan Sistem Manajemen K3. Jakarta: Kementerian Sekretariat Negara RI.
- Priambada, K. D. (2017). *Pemanfaatan limbah kayu palet dalam penciptaan hiasan terarium* (Skripsi). Fakultas Bahasa dan Seni, Jurusan Pendidikan Seni Rupa, Universitas Negeri Yogyakarta.
- Rejeki, S. (2015). *Sanitasi, hygiene, dan K3 (Kesehatan & Keselamatan Kerja)*. Bandung: Rekayasa Sains.
- Sasmita, A., Reza, M., & Rozi, R. M. (2021). Pemetaan dan perhitungan pemaparan tingkat kebisingan pada industri pengolahan kayu di Kecamatan Siak, Provinsi Riau. *Al-Ard: Jurnal Teknik Lingkungan*, 6(2), 68–76.
- Syahriatul, S. H., Ayu, F., Zahra, J. S., Alfaridzi, R. K., & Sunaryo, M. (2023). Edukasi bahaya kebisingan pada pekerja sektor informal Kota Surabaya. *Jurnal Pengabdian kepada Masyarakat Nusantara*, 4(3), 1952–1957.
- Zahra, J. S., Ayu, F., Hikmiah, S., Al Farizi, R., & Sunaryo, M. (2023). Sosialisasi kesehatan terkait gangguan gerak otot rangka akibat kerja (GOTRAK) pada pengrajin di KUB Mampu Jaya. *Abdimas Unwahas*, 8(2).