



# RISK FACTORS OF HEARING LOSS AMONG VECTOR CONTROL WORKERS IN KEDAH

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## INTRODUCTION

Noise-induced hearing loss (NIHL) is hearing loss due to excessive noise and is the leading occupational disease in Malaysia. Hearing loss is defined as a partial or total inability to hear marked by a hearing threshold worse than 25 dB at any audiometric test frequency (1). Vector control workers are at risk of developing hearing loss due to exposure to noise from fogging machines and exposure to chemicals that may be deleterious to their hearing such as organophosphate and diesel(2). Research on hearing loss in Malaysia has been limited.



## OBJECTIVE

To determine the prevalence and risk factors of hearing loss among vector control workers in Kedah

## METHODOLOGY

This was a cross-sectional study using secondary data from medical surveillance of vector control workers by the Occupational and Environmental Health Unit in the Kedah State Health Department. We used purposive sampling and included 97 vector control workers from three districts of Kota Setar, Baling, and Kulim.

•**Independent:** Sociodemographic characteristics (age, gender, comorbid, length of service, work unit, job category), previous and current occupational noise exposure, compliance to hearing protection)

•**Dependent:** Hearing loss (hearing threshold worse than 25 dB at any frequency)

Descriptive analysis and multiple logistic regression were conducted to identify the factors for the hearing loss using STATA version 14.0.

**Table 1: Multivariate Logistic Regression of Associated Factors of Hearing Loss among Vector Control Workers**

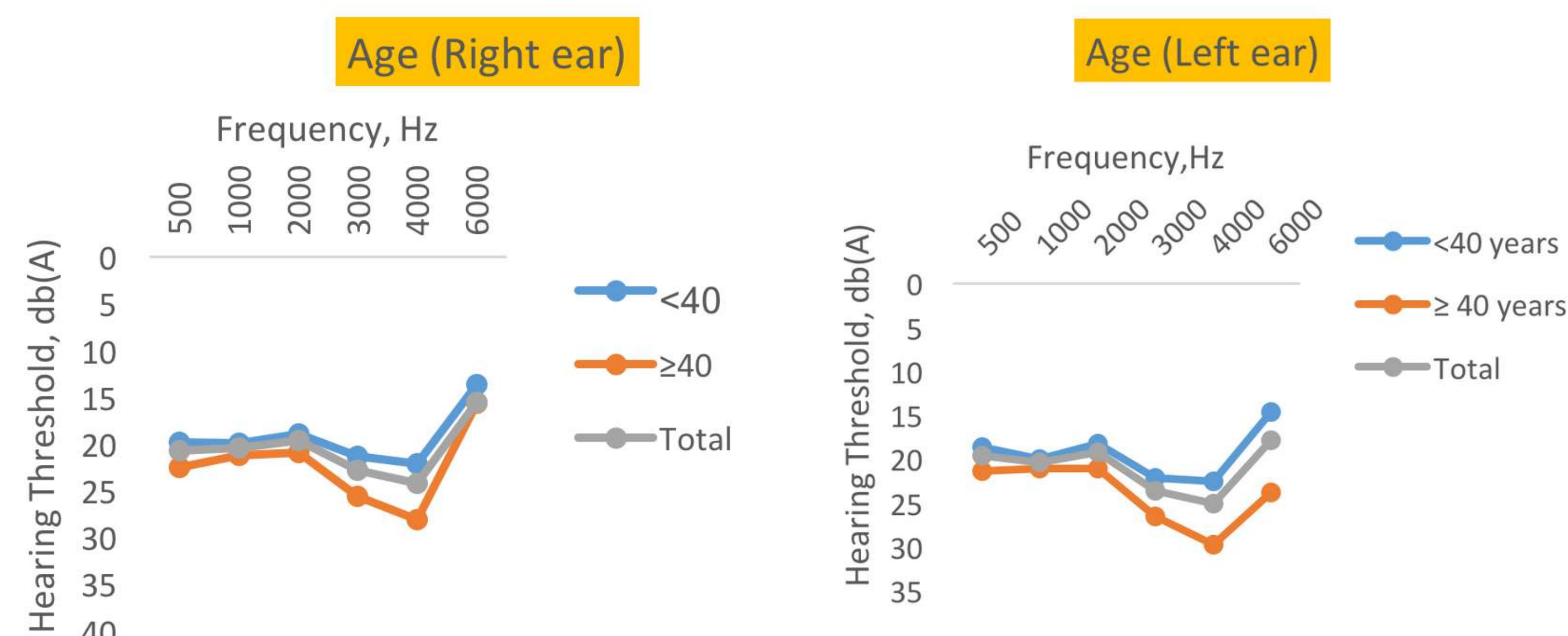
Variable	B-coef	SE	Adjusted OR	95% CI	P value
Age <40 years			1.0 (reference)		
Age >40 years	1.739	3.177	5.694	1.907, 16.996	0.002
Female			1.0 (reference)		
Male	1.072	2.693	2.922	0.479, 17.794	0.245
Non Smoking			1.0 (reference)		
Smoking	0.797	1.062	2.219	0.868, 5.670	0.096
No Comorbid			1.0 (reference)		
Comorbid	-0.203	0.429	.816	0.291, 2.288	0.699
Current noise exposure			1.0 (reference)		
No					
Yes	-0.657	0.354	0.517	0.135, 1.980	0.336
Hearing Protection			1.0 (reference)		
Yes					
No	-0.599	0.348	0.548	0.158, 1.903	0.344
_cons		.462	.465	0.066, 3.265	0.442

## ACKNOWLEDGEMENT

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## RESULTS & DISCUSSION

The mean age of workers was 37.3 ( $\pm 7.5$ ) years and the mean length of services was 10.6 ( $\pm 6.3$ ) years. The majority of the workers were male 90, 92.8%, non-smoking 58, 59.8%, and no comorbid 70, 72.2%. A total of 31, 32% reported having previous occupational noise exposure and 78, 80.4% were exposed to current occupational noise. Nevertheless, 21, 21.7% reported not compliance with PPE of hearing protection. The prevalence of hearing loss among vector control workers in Kedah was 57, 58.8%. The percentage is higher than a previous systematic review which reported the prevalence between 7-21% of hearing loss among workers (3). Following logistic regression, those aged more than 40 years were five times more likely to get hearing loss as compared to those aged less than 40 years (OR 5.694, 95% CI 1.907, 16.996) (Table 1). The older age group may have been exposed to excessive noise for a far longer period than the younger age group (2).



**Figure 1: Threshold audiogram for both ears according to age.**

## CONCLUSION

Our study found the prevalence of 58.8% of vector control workers had hearing loss and age more than 40 years was a significant contributing factor. Strengthening of hearing conservation programs including noise risk assessment, yearly audiometry, training, PPE of hearing protection, notification and record keeping is vital to prevent noise induce hearing loss

## REFERENCES

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