

## **Predictors of aircraft related noise induced hearing loss (NIHL) among technicians in Royal Malaysian Air Force (RMAF)**

### **ABSTRACT**

**Background:** Noise-induced hearing loss (NIHL) is one of the most common occupational illnesses in Malaysia. This study was intended to assess the predictors of NIHL among Royal Malaysian Air Force aircraft technicians.

**Materials and Methods:** A cross sectional study was conducted in Butterworth Air Base. Respondents were selected based on simple random sampling and the sample size estimation calculated using two proportion sample size formulation. Instruments used in this study including a set of questionnaire; a sound level meter; a personal dosimeter; and a pure tone audiometry. Data was analysed using IBM Statistical Package for Social Science (SPSS) version 21.0 and level of significance at  $P < 0.05$ .

**Result:** There were 263 (80.2%) respondents with the response rate of 80.2%. The mean age of the respondents was  $31.98 \pm 4.81$  year old. Personal noise dosimeter showed that time weighted average, TWA8 for respondents in 3Sqn was  $93.2 \pm 2.0$  dB(A), 15Sqn was  $112.0 \pm 5.2$  dB(A) and 18Sqn was  $118.1 \pm 3.6$  dB(A). Average noise exposure level (LAVG) during measurement period for the respondents was  $95.2 \pm 3.1$  dB(A) for 3Sqn,  $116.0 \pm 4.4$  dB(A) for 15Sqn and  $121.4 \pm 4.7$  dB(A) for 18Sqn. Overall prevalence of NIHL among RMAF aircraft technicians was 24.2%. The significant predictor for NIHL were involvement in loud sound leisure activity (aOR=2.491, 95%CI=1.113-5.574,  $P < 0.05$ ), and those who ever experienced tinnitus (aOR=4.335, 95%CI=1.169-5.662,  $P < 0.05$ ).

**Conclusion:** NIHL was prevalent among military aircraft technicians. Therefore, control of noise hazards and good practice towards noise should be implemented in RMAF workplace.

**Keyword:** Noise induced hearing loss; Air force; Aircraft technician; Sound pressure level