

UNIVERSITI TEKNOLOGI MARA

**THE RELATIONSHIP BETWEEN
OCCUPATIONAL EXPOSURE TO
NOISE AND HEARING FUNCTION
AMONG PAPER FACTORY
WORKERS**

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Project submitted in fulfilment of the requirement for
the degree of
**Bachelor in Environmental Health and Safety
(Hons.)**

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DECLARATION BY STUDENT

Project entitled “The Relationship Between Occupational Exposure to Noise and Hearing Function Among Paper Factory Workers” is a presentation of my original research work. Whenever contributions of others are involved, every effort is made to indicate this clearly, with due reference to literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Project Supervisor, Mr Razi Ikhwan Bin Md Rashid. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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In the name of Allah, The Most Gracious, The Most Merciful.

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TABLE OF CONTENTS

TITLE PAGE	
DECLARATION BY STUDENT	ii
INTELLECTUAL PROPERTIES	iii
APPROVAL BY SUPERVISOR	v
ACKNOWLEDGEMENT	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ABBREVIATIONS	xiii
ABSTRACT	xiv
ABSTARK	xv
CHAPTER 1: INTRODUCTION	1
1.1 Background	1
1.2 Problem statement	4
1.3 Objective	5
1.3.1 General objective	5
1.3.2 Specific objective	5
1.4 Study hypothesis	5
1.5 Study justification	5
1.6 Significance of the study	6
1.7 Conceptual and operational definitions	6
1.8 Conceptual framework	8

ABSTRACT

Factories and Machinery (Noise Exposure) Regulation 1989 have always demanded employers to protect their employees from high level noise exposure. However, for the past few years, noise induced hearing loss (NIHL) has been the highest notifiable occupational health issue among Malaysian workers. Thus, this cross-sectional study aims to investigate the relationship between noise exposure levels and hearing function among 56 factory workers who work in different areas within a Selangor-based paper factory. Pure tone audiometry test results were used to determine the hearing levels of the participants. The result shows that the production workers were exposed to higher levels of noise compared to management workers. The comparison of noise exposure level is made by measuring differences between these two groups. An evaluation of the results shows that there is statistically significant difference between the mean noise exposure of production workers and management workers. The mean noise exposure level for production workers is 86.83 dB (A) and for the management workers, it is 72.99 dB (A). The results revealed that there is a statistically significant difference between the mean noise exposure level of production workers ($M=86.83$, $SD=5.60219$) and management workers ($M=72.99$, $SD=7.62284$), the p-value is equal to 0.01 which is less than 0.05. Thus, 95% confidence interval, CI was 8.54852 to 18.03148. The p-value is less than 0.05 and CI does not across 0. Based on the results and findings, the noise exposure level shows that equivalent continuous noise levels ranged from 64.1 to 95.2 dB (A). 40% of the participants faced noise exposure above 85 dB (A) and 20% of them have mild hearing loss. In conclusion, production workers are exposed to higher levels of noise, thus exposing them to a higher risk in hearing loss compared to the management workers who are exposed to lower levels of noise thus the risk of developing hearing loss is minimal. Other than occupational noise exposure levels, age, duration of working and type of job were also possible influencing factors in developing hearing loss.

Keywords: Audiometric test; hearing loss; management workers; noise induced hearing loss; paper factory workers; production workers