UNIVERSITI TEKNOLOGI MARA

A STUDY OF NON-AUDITORY EFFECTS DUE TO NOISE EXPOSURE AMONG AIRPORT WORKERS

NOR LIYANA BINTI MAN

Project Paper Submitted In Partial Fulfillment of the Requirements for the Degree of Bachelor in Environmental Health and Safety (Hons.)

Faculty of Health Sciences

MAY 2011

Declaration by Student

Project entitled "A Study of the Non-auditory Effects Due To Noise Exposure among Airport Workers" is a presentation of my original work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due to reference to the literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Tuan Haji Mohd Pozi B. Mohd Tahir as Project Supervisor and Mr. K. Subramaniam, (MCIEH) as Co- supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

Student's Signature:

.....

(Nor Liyana Binti Man)

2007287992

880212-02-5516

Date: 26/5/2011

ACKNOWLEDGEMENT

Alhamdulillah. Thanks to Allah S.W.T., with His willing to give me this opportunity to complete this Final Year Project, basically for student in final year to complete undergraduates program that leads to the Degree of Environmental Health and Safety.

I would like to thank all those who gave me the possibility in completing this project. First and foremost, I want to express my sincere gratitude to my supervisor, Tuan Haji Mohd Pozi B. Mohd Tahir who has supported me throughout my thesis with his guidance, encouragement, patience and knowledge. I am also thankful to my co-supervisor, Mr. K. Subramaniam (MCIEH), for his advice, guidance and motivation. Many thanks as well to my panels for the critics and comments.

Besides, this project would not have been possible without the constant encouragement, love, sacrifice and support of my beloved family who has provided assistance in numerous ways.

I am deeply indebted to staff at Environmental Health and Safety Laboratory, Faculty of Health Sciences, Universiti Teknologi Mara and also staff at Sultan Ismail Petra Airport, Kota Bahru, Kelantan for their generous assistance. I am very grateful to my fellow friends whose friendship and support have helped me in preparing this project.

TABLE OF CONTENTS

TITLE		PAGE
DECLARATION BY STUDENT		ii
APPROVAL BY SUPERVISORS		iii
ACKNOWLEDGEMENT		iv
TABLE OF CONTENTS		v
LIST OF TABLES		ix
LIST OF FIGURES		x
LIST OF APPENDICES		xi
ABSTRACT		xii
CHAPTER ONE: INTRODUCTION		
1.1	Background Information	1
1.2	Problem Statement	2
1.3	Study Justification	3
1.4	Study Objective	5
1.5	Study Hypothesis	5
1.6	Conceptual Framework	6
1.7	Conceptual And Operational Definition	7
1.7.1	Conceptual Definition	7
1.7.2	Operational Definition	8
CHAPTER TWO: LITERATURE REVIEW		
2.1	Aircraft Noise	9

Abstract

A Study of Non-Auditory Effects due to Noise Exposure among Airport Workers

Nor Liyana Binti Man

Noise can be defined as unwanted sound. Sound is responded in a different way and subjectively by people. Effects of noise can be dividing into two, auditory and non-auditory effects. Auditory effects related to hearing loss and non-auditory effects related to physiological effects and psychological effects. The study was conducted at Sultan Ismail Petra Airport, Kota Bahru, Kelantan. Respondents in study group were selected at two different locations such as fire station and engineering area. The study design of this study is cross-sectional study. Sampling data collection has been done by using Sound level meter, Dosimeter, Automatic Sphygmomanometer, questionnaires, Digital camera, oral interview and observation. A statistical analysis that is statistical package for the social science (SPSS) version 16.0 was used in this study. The study was found that the highest environmental noise level comes from aircraft engines [136.3 dB(A)]. Then, workers at engineering area was recorded highest level of noise exposure computed in 8-hours period, 92.3dB (A). Log data analysis at study group is 91.1 dB(A) while at control group is 71.2 dB(A) . For the measurement of blood pressure (BP), the mean of systolic blood pressure after work is 135.53mmHg while the mean of diastolic blood pressure after work is 90.70mmHg. Statistical analysis showed that there is significant association *(p-value <0.05) between high noise level and increase in BP. Result also showed that there is significant association *(p-value <0.05) between high noise level and other non-auditory effects such as ringing, headache, anxiety and emotional disturbance. In conclusion, there is a significant association between high noise level and non-auditory effects of noise.

Keywords: Noise Exposure, Non-auditory Effects, Systolic and Diastolic Blood Pressure, TWA