UNIVERSITI TEKNOLOGI MARA

ASSOCIATION BETWEEN EXPOSURE TO PM_{10} AND LUNG FUNCTION PERFORMANCE AMONG CONSTRUCTION WORKERS

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Project submitted in fulfilment of the requirements

for the degree of

Bachelor (Hons.) of Environmental Health and

Safety

Faculty of Health Sciences

JULY 2015

Declaration by Student

Project entitled "ASSOCIATION BETWEEN EXPOSURE TO PM10 AND LUNG FUNCTION PERFORMANCE AMONG CONSTRUCTION WORKERS" is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of my project supervisor, Madam Shantakumari Rajan. 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).

Student's Signature:

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920426-02-5355

ACKNOWLEDGEMENT

Alhamdulillah, all praise to ALLAH, The Supreme Lord of the Universe. Piece and blessing to Nabi Muhammad S.A.W, all the prophets, their families and all the Muslims.

I have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I am highly indebted to my project supervisor Madam Shantakumari Rajan for her guidance and constant supervision as well as for providing necessary information regarding the project. I also would like to thank the laboratory Assistant of Department of Environmental Health and Safety which are Pn Maziah Mahaad and En. Erdzuam Abd Rashid for helping me in using the instrument for this study.

A big appreciation to Mr. Raymond Lee as a Project Manager at Verdi Symphony Hill which is the place of this study carried out. Fluency of this study also got helped from Safety and Health Officer (SHO) and worker at the construction site.

Lastly, big thanks to my parent for helping me in term morale, financial and time in finishing my study. My friend also gives me a lot of support and idea in writing and conducting this research.

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ABSTRACT

Association between Exposure to PM_{10} and Lung Function Performance among Construction Worker

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A crossectional study was carried out to the construction worker at Verdi Symphony Hills in Cyberjaya, Selangor comprised thirty (30) workers of construction worker and seventeen (17) workers from office worker as control group. The sample was selected randomly based on inclusive criteria which are nonsmoking and never experience any respiratory illness. Three procedures was conducted to the sample study which are Personal Air Monitoring to measure the exposure level of PM10 to the sample, Lung Function Test to measure the lung performance among sample and answering a series of questionnaire to identify symptom related with exposure to the PM_{10} experience by samples. Findings shows there have significant different and correlation ($p<0.05$) between exposed (construction worker) and unexposed group (office worker) in term of PM_{10} exposure level and percentage of FEV1 and FVC. Mean value for the exposure level to PM_{10} gives 2.30±0.87 mg/m^3 for the exposed group and 0.53±0.24 mg/m^3 for the unexposed group. Percentage of FEV1 gives means value about 64.73±16.793 and 87.06±5.202 and percentage of FVC gives 66.43±15.23 and 88.00±8.78 for the exposed and unexposed group respectively. The allergic symptom to the PM10 also shows significant association with group of respondent. As conclusion, it's clearly show relationship between exposure to the PM10 and Lung function Performance among the construction worker and responsible party must control the exposure by enforcement and supplying PPE to the worker.

Keyword: PM10, Lung Function Performance, FEV1, FVC, Symptom