UNIVERSITI TEKNOLOGI MARA

HEAT STRESS AND POTENTIAL OF HEAT STRAIN AMONG SOLID WASTE COLLECTORS

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Project submitted in fulfillment of the requirements for
the degree of
Bachelor in Environmental Health and Safety
(Hons.)

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DECLARATION BY STUDENT

Project entitled "Heat Stress and Potential of Heat Strain among Solid Waste Collectors" 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, Madam Siti Rohana Binti Mohd Yatim. 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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ABSTRACT

Waste collectors are greatly potential to get excessive hot temperature while working especially during the middle of the day. Heat stress is a common health hazard for those workers who work in hot environments whether in outdoor or indoor. Therefore, the aim of this study is (i) to determine the level of heat stress among waste collectors, (ii) to assess the heat strain index among solid waste collectors, and (iii) to determine the relationship between heat stress exposure and heat strain index among solid waste collectors. The level of heat stress was measured by using environmental monitoring, heat stress screening checklist and questionnaire. QUESTemp°36 Thermal Environment Monitor model was used and the parameter that being studied was WBGT (out) and relative humidity for 9 days. A questionnaire known as Heat Strain Score Index (HSSI) was used to determine the heat strain index among solid waste collectors. The results of the study shows that the average environmental parameter which is Wet Bulb Glob Temperature (WBGTout) was exceeded with the ACGIH threshold limit value which is 29.5°C. The average value of the humidity is 63.43%. A chi square analysis is being used to determine the *p*-value of HSSI. There was statistically significant between green zone and yellow zone of heat strain among the workers due to the *p*-value is less than 0.05 ($p<0.05$). Simple linear regression model being used to determine the relationship between heat stress exposure and heat strain score index. There is no significance for this study where the *p*-value is 0.641, which ($p>0.05$). It can be conclude that the hypothesis is rejected, since there is no association between the heat stress exposure level and heat strain score index due to *p*-value is more than 0.05.

Keywords: *waste collector, temperature, heat stress, heat strain score index (HSSI).*